AUBURN UNIVERSITY

Auburn, Alabama

ALABAMA'S
LAND GRANT
UNIVERSITY

1962-63 CATALOG NUMBER
With Announcements for 1963-64

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VOLUME 58 MARCH 1963 NUMBER 2

1963

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UNIVERSITY CALENDAR

1963—Summer Quarter (48 class days)

May 22, *Wednesday*—Last day for filing applications

June 12-13, *Wednesday* and *Thursday*—Registration

June 14, *Friday*, 7:00 a.m.—Classwork begins

June 14-18, *Friday* through *Tuesday*—Special examinations

June 15, *Saturday*, 7:00 a.m. to 10:00 p.m.—Classes (Tuesday schedule); Last day for term registration

June 17-18, *Monday* and *Tuesday*—Change-in-registration period

June 18, *Tuesday*—Last day for registering or adding courses

July 4, *Thursday*, Independence Day—Holiday

July 18, *Thursday*—Final examinations first term; registration for second term; reporting of mid-quarter deficiencies

July 19, *Friday*—Classwork begins for second term students

*August 21-23, *Wednesday* through *Friday*—Final examinations for quarter

August 21, *Wednesday*—Last day of classes for second term students

August 22, *Thursday*—Final examinations for second term

August 24, *Saturday*—Graduation exercises

1963—Fall Quarter (49½ class days)

September 4, *Wednesday*—Last day for filing applications

September 24, *Tuesday*, 4:00 p.m.—Freshmen report for orientation

September 25-28, *Wednesday* through *Saturday*—Registration

September 30, *Monday*, 7:00 a.m.—Classwork begins

September 30-October 3, *Monday* through *Thursday*—Special examinations

October 1-2, *Tuesday* and *Wednesday*—Change-in-registration period

October 2, *Wednesday*—Last day for new registrations

October 29, *Tuesday*—General Faculty Meeting

November 1, *Friday*—Reporting of mid-quarter deficiencies

November 18-19, *Monday* and *Tuesday*—Pre-registration for Winter Quarter

November 27-December 1, *Wednesday* noon through *Sunday*—Thanksgiving recess

December 10, *Tuesday*, 10:00 p.m.—Classwork ends

December 11, *Wednesday*—No classes

*December 12-17, *Thursday* through *Tuesday*—Final examinations

December 18, *Wednesday*—Graduation exercises

1964—Winter Quarter (48 class days)

December 13, *Friday*—Last day for filing applications

January 2-3, *Thursday* and *Friday*, 7:30 a.m. to 4:30 p.m.—Registration

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UNIVERSITY CALENDAR

January 6, *Monday*, 7:00 a.m.—Classwork begins
January 6-9, *Monday* through *Thursday*—Special examinations
January 7-8, *Tuesday* and *Wednesday*—Change-in-registration period
January 8, *Wednesday*—Last day for new registrations
February 6, *Thursday*—Reporting of mid-quarter deficiencies
February 17-18, *Monday* and *Tuesday*—Pre-registration for Spring Quarter
*March 12-16, *Thursday* through *Monday*—Final examinations
March 17, *Tuesday*—Graduation exercises

1964—Spring Quarter (48 class days)

March 2, *Monday*—Last day for filing applications
March 23-24, *Monday* and *Tuesday*, 7:30 a.m. to 4:30 p.m.—Registration
March 25, *Wednesday*, 7:00 a.m.—Classwork begins
March 25-30, *Wednesday* through *Monday*—Special examinations
March 26-27, *Thursday* and *Friday*—Change-in-registration period
March 27, *Friday*—Last day for new registrations
March 28, *Saturday*—Classes (Tuesday schedule)
April 11, *Saturday*—Village Fair
April 27, *Monday*—Reporting of mid-quarter deficiencies
April 29, *Wednesday*—General Faculty Meeting
May 4-5, *Monday* and *Tuesday*—Pre-registration for Summer Quarter
May 6, *Wednesday*—Honors Day
*May 29-June 2, *Friday* through *Tuesday*—Final examinations
June 3, *Wednesday*—Graduation exercises

1964—Summer Quarter (48 class days)

May 21, *Thursday*—Last day for filing applications
June 11-12, *Thursday* and *Friday*—Registration
June 15, *Monday*, 7:00 a.m.—Classwork begins
June 15-18, *Monday* through *Thursday*—Special examinations
June 16, *Tuesday*—Last day for term registration
June 16-17, *Tuesday* and *Wednesday*—Change-in-registration period
June 17, *Wednesday*—Last day for registering or adding courses
July 17, *Friday*—Final examinations first term; registration for second term; reporting of mid-quarter deficiencies
July 20, *Monday*—Classwork begins for second term students
August 20, *Thursday*—Last day of classes for second term students
*August 20-22, *Thursday* through *Saturday*—Final examinations for quarter
August 21, *Friday*—Final examinations for second term
August 24, *Monday*—Graduation exercises

* Approved group examinations limited to four days prior to this date.

1964

JANUARY

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The Auburn Board of Trustees

Under the organic and statutory laws of Alabama, Auburn University is governed by a Board of Trustees consisting of one member from each congressional district, as these districts were constituted on January 1, 1961, an extra member from the congressional district in which the institution is located, and the Governor and State Superintendent of Education, who are ex-officio members. The Governor is chairman. Members of the Board of Trustees are appointed by the Governor by and with the advice and consent of the State Senate and hold office for terms of twelve years. Members of the board receive no compensation.

The Board of Trustees places administrative authority and responsibility in the hands of an administrative officer at Auburn University. The institution is grouped for administrative purposes into divisions, schools, and departments.

Members of the Board

His Excellency, GEORGE C. WALLACE, Governor, President (Ex-officio)—Montgomery

A. R. MEADOWS, State Superintendent of Education (Ex-officio)—Montgomery

Term Expires 1963

Name	*District*	*Home*
E. A. ROBERTS	*First*	Mobile
W. J. FORRESTER	*Third*	Dothan
G. H. WRIGHT	*Third*	Auburn
FRANK P. SAMFORD	*Ninth*	Birmingham

Term Expires 1967

E. L. WYNN	*Fourth*	Ashland
M. H. MOSES	*Fifth*	Fyffe
PAUL S. HALEY, *Vice-President*	*Seventh*	Jasper

Term Expires 1971

R. C. BAMBERG	*Sixth*	Uniontown
REDUS COLLIER	*Eighth*	Decatur
JOHN W. OVERTON	*Second*	Montgomery

BERTA DUNN, *Secretary*

FIRST DISTRICT COUNTIES: Choctaw, Clarke, Marengo, Mobile, Monroe, Washington and Wilcox.

SECOND DISTRICT COUNTIES: Baldwin, Butler, Conecuh, Covington, Crenshaw, Escambia, Lowndes, Montgomery and Pike.

THIRD DISTRICT COUNTIES: Barbour, Bullock, Coffee, Dale, Geneva, Henry, Houston, Lee, Macon and Russell.

FOURTH DISTRICT COUNTIES: Autauga, Calhoun, Clay, Coosa, Dallas, Elmore, St. Clair and Talladega.

FIFTH DISTRICT COUNTIES: Chambers, Cherokee, Cleburne, DeKalb, Etowah, Marshall, Randolph and Tallapoosa.

SIXTH DISTRICT COUNTIES: Bibb, Chilton, Greene, Hale, Perry, Shelby, Sumter and Tuscaloosa.

SEVENTH DISTRICT COUNTIES: Blount, Cullman, Fayette, Franklin, Lamar, Marion, Pickens, Walker and Winston.

EIGHTH DISTRICT COUNTIES: Colbert, Jackson, Lauderdale, Lawrence, Limestone, Madison and Morgan.

NINTH DISTRICT COUNTY: Jefferson.

Officers of Administration

1962-1963

(The first date after the title indicates the year of first appointment to any position in the institution; the second, the year of appointment to present rank.)

DRAUGHON, RALPH BROWN ..... *President*, 1931, 1948
B.S., M.S., Auburn University; L.L.D., Birmingham-Southern College.

ANDERSON, ROBERT C. ..... *Executive Vice-President*, 1961
B.S., Auburn University; M.A., University of North Carolina; Ph.D., New York University.

**VALLERY, H. F. ..... *Assistant to the President*, 1950, 1960
B.A., M.A., Louisiana State University; M.A., Ed.D., Columbia University.

GENERAL OFFICERS

HUNTLEY, MICHEL C. ..... *Dean of Faculties*, 1949
B.A., Millsaps College; M.A., Emory University; L.L.D., Millsaps College; Litt.D., University of Miami.

BEARD, G. W. (JEFF) ..... *Director of Athletics*, 1937, 1951
B.S., Auburn University.

BROWN, MORGAN W. ..... *Director of Student Health*, 1950
B.S., M.D., Tulane Medical School.

BRUMFIELD, EDWARD JAY ..... *Admissions Officer*, 1953, 1961
B.A., M.A., University of Kentucky.

CAIN, JOHN L. ..... *Director of Engineering Extension*, 1962
B.Ch.E., Georgia Institute of Technology.

CANTRELL, CLYDE HULL ..... *Director of Libraries*, 1944
A.B., A.B.L.S., M.A., University of North Carolina; Ph.D., University of Illinois.

CRAWFORD, EDWIN ..... *Director of University Relations*, 1962
B.S., Auburn University.

DUNLAP, JOHN F. ..... *Director of Student Financial Aid*, 1959, 1962
B.S., Clemson College.

EDWARDS, CHARLES WESLEY ..... *Registrar*, 1927, 1938
B.S., Auburn University; M.A., Harvard University.

FUNCHESS, LINWOOD E. ..... *Director of Buildings and Grounds*, 1957
B.S., Auburn University; M.S., Cornell University.

INGRAM, WILLIAM TRAVIS ..... *Business Manager and Treasurer*, 1925, 1953

JONSON, W. C., JR. ..... *Director of Auburn Research Foundation*, 1956, 1959
B.S., U.S. Naval Academy.

POORE, WILLIAM D. ..... *Director of University Personnel Office*, 1957, 1961
B.S., M.A., University of Illinois.

RUSSELL, CHESTER HAROLD ..... *Director of Student Counseling Services*, 1962
B.A., Troy State College; M.A., Florida State University; Ph.D., Indiana University.

SARVER, JOSEPH B. ..... *Executive Secretary of Alumni Office;*
B.S., Auburn University. *Director of AU Development Program*, 1951, 1960

SAUNDERS, ROBERT L. ..... *Director of Correspondence Study Program*, 1957
B.S., M.S., Ed.D., Auburn University.

SWANSON, JOHN E. ..... *Director of Institutional Research*, 1962
B.A., DePauw University; M.A., U.C.L.A.; Ph.D., University of Illinois.

ZALLEN, HAROLD ..... *Radiological Safety Officer*, 1961
B.S., Northwestern University; Ed.M., Boston University; M.S., Ph.D., Purdue University.

** On leave.

DEANS AND HEADS OF SCHOOLS AND ASSISTANT DEANS

ALLEN, ROGER WILLIAMS ..... *Dean, School of Science and Literature,* 1928, 1941
B.S., M.S., Auburn University; M.A., University of Michigan; Ph.D., Columbia University.

BAILEY, WILFORD S. ..... *Associate Dean, Graduate School, and Coordinator of Research,* 1942, 1962
D.V.M., M.S., Auburn University; Sc.D., Johns Hopkins.

BRENKERT, KARL, JR. ..... *Assistant Dean, School of Engineering,* 1960
B.S.E., University of Michigan; M.S., Ph.D., Stanford University.

CATER, KATHARINE COOPER ..... *Dean of Women and Social Director,* 1946
A.B., Limestone College; M.A., Mercer University; M.S., Syracuse University; Litt.D., Limestone College.

COKER, SAMUEL TERRY ..... *Dean of Pharmacy,* 1959
B.S., Auburn University; M.S., Ph.D., Purdue University.

COLLINS, DAVID A. ..... *Assistant Dean of Student Affairs,* 1962
B.A., Presbyterian College, (South Carolina); M.A., Memphis State.

CURTIS, FREDERICK L. ..... *Professor of Naval Science and the Commanding Officer,* 1962
Captain, U.S. Navy; B.A., University of Washington.

DELONEY, SUSAN ..... *Assistant Dean of Women,* 1955, 1957
B.S., Auburn University; M.S., Cornell University.

FOY, JAMES E. ..... *Dean of Student Affairs,* 1950, 1960
B.A., M.A., University of Alabama.

GREENE, JAMES E. ..... *Dean of the School of Veterinary Medicine,* 1937, 1958
D.V.M., M.S., Auburn University.

JOHNSON, A. G. W. ..... *Professor of Military Science,* 1962
Colonel, U.S. Army; B.S., U.S.M.A. West Point; M.B.A., Syracuse University.

PARKER, WILLIAM VANN ..... *Dean, Graduate School,* 1950, 1953
A.B., M.A., North Carolina; Ph.D., Brown.

PIERCE, TRUMAN M. ..... *Dean, School of Education,* 1955
Ph.B., Piedmont College; M.A., University of Alabama; Ph.D., Columbia University.

PUMPHREY, FRED H. ..... *Dean, School of Engineering,* 1958
B.A., B.E.E., E.E., Ohio State University.

SAUNDERS, C. R. ..... *Dean, School of Chemistry,* 1924, 1950
B.S., M.S., Auburn University; Ph.D., University of Nebraska.

SIMMONS, CHARLES F. ..... *Associate Dean, School of Agriculture,* 1946, 1950
B.S., M.S., Auburn University; Ph.D., Ohio State University.

SMITH, EDWIN VIRGINIUS ..... *Dean, School of Agriculture,* 1929, 1951
B.S., Auburn University; M.S., Ph.D., Iowa State University.

SPEER, WILLIAM A. ..... *Dean, School of Architecture and The Arts,* 1962
B.S., Clemson College; M.Arch., Rensselaer Polytechnic Institute.

WILLIAMS, RALPH I. ..... *Professor of Air Science and the Commandant,* 1960
Colonel, USAF; B.A., M.A., University of Maryland.

WILSON, COYT T. ..... *Assistant Dean, School of Agriculture,* 1938, 1951
B.S., M.S., Auburn University; Ph.D., University of Minnesota.

AGRICULTURAL EXPERIMENT STATION

SMITH, EDWIN VIRGINIUS ..... *Director,* 1929, 1951
B.S., Auburn University; M.S., Ph.D., Iowa State University.

WILSON, COYT T. ..... *Associate Director,* 1938, 1955
B.S., M.S., Auburn University; Ph.D., University of Minnesota.

SIMMONS, CHARLES F. ..... *Assistant Director,* 1946, 1955
B.S., M.S., Auburn University; Ph.D., Ohio State University.

ENGINEERING EXPERIMENT STATION

PUMPHREY, FRED H. ..... *Director*, 1958
B.A., B.E.E., E.E., Ohio State University.

BRENKERT, KARL, JR. ..... *Assistant Director*, 1960
B.S.E., University of Michigan; M.S., Ph.D., Stanford University.

AGRICULTURAL AND HOME ECONOMICS EXTENSION

ROBERTSON, FRED R. ..... *Director of Agricultural Extension Service*, 1960, 1961
B.S., M.S., University of Tennessee; D.P.A., Harvard University.

JONES, RALPH R. ..... *Assistant Director of Agricultural Extension Service*, 1936, 1961
B.S., Auburn University; M.S., Michigan State University.

TAYLOR, W. H. ..... *Assistant to the Director Rural Research Development*, 1948, 1962
B.S., Auburn University; M.S., Cornell University.

WARREN, HOYT M. ..... *Assistant to the Director, Programs*, 1945, 1960
B.S., Auburn University; M.S., Ph.D., Cornell University.

COLEMAN, MRS. MARY E. ..... *State Home Demonstration Agent*, 1936, 1958
B.S., Auburn University; M.S., Columbia University.

REAVES, RAYMOND M. ..... *Assistant to the Director, Field Service*, 1949, 1962
B.S., Auburn University.

EDUCATIONAL TELEVISION

WEGENER, E. P. ..... *Director, Educational Television*, 1954
B.S., University of Minnesota.

NUCLEAR SCIENCE CENTER

ANDREWS, WARREN M. ..... *Special Assistant to the President for the Nuclear Science Center*, 1961
B.S., Auburn University; M.S., Vanderbilt; M.S., Ph.D., University of California.

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Auburn University—Past and Present

Historical Sketch

Auburn University was chartered February 1, 1856, as a denominational institution known as the East Alabama Male College. It was formally opened October 1, 1859, and shortly thereafter sponsorship was assumed by the Methodist Church. In 1861, a short period of growth was interrupted by the War Between the States and the College, except for the preparatory department, suspended operation. The College building was used as a hospital from 1864 to 1866. Reopening in 1866, the College was continually beset with financial problems.

In 1862 Congress passed the Land-Grant College Act which provided for the donation of lands to the states for the establishment of colleges, the leading object of which, without excluding other sciences and classical studies, was to teach such branches of learning as Agriculture and the Mechanic Arts "in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Alabama accepted this act in 1868.

The Alabama Legislature, by an act approved February 26, 1872, accepted an offer of the Alabama Conference of the Methodist Episcopal Church, South, to donate to the State the property and good will of the East Alabama Male College, and located the Alabama Agricultural and Mechanical College at Auburn, the first land-grant college in the South established separate from the state university.

When women students were admitted in 1892, college coeducation was inaugurated in the South.

In 1899, the Legislature, following an earlier action of the Board of Trustees, changed the name of the institution to The Alabama Polytechnic Institute. Justification for the change was that the college had broadened its program and taught not only the branches related to Agriculture and the Mechanic Arts, but also the sciences and arts related to the development of modern civilization.

Variously called a liberal arts college, a technical college, a technological college, a college of industrial science, a college of applied science, and more recently a university of applied science, but always described as a liberal college, with the addition of wider offerings in the arts and the sciences and of more liberal arts curricula, the institution developed into a university in every sense of the word. From the first the name of the City – a name drawn from the Goldsmith's immortal line, "Auburn, loveliest village of the plain" – has been used to designate the institution. In recognition of these facts, the Legislature, as of January 1, 1960, changed the name of the institution to Auburn University.

Auburn University today is one of the South's largest institutions. From an enrollment of 80 in 1859, the student body has increased to more than 9,000. The original plant consisting of a single building and 16 acres has expanded into a multi-million dollar plant comprising 53 main buildings and 1,871 acres. As a land-grant institution, through its programs of instruction, agricultural and engineering experiment station research, and the Alabama Ex-

tension Service, Auburn University touches the life of nearly every Alabama family.

The City of Auburn, incorporated in 1838 in Lee County, Alabama, is located at the junction of the southern border of the Piedmont Plateau with the Coastal Plains. The elevation is 732 feet and temperatures are moderate throughout the year. It has an area of about 20 square miles and a population of approximately 18,000.

Auburn is 60 miles east of Montgomery, 120 miles southeast of Birmingham, and 125 miles southwest of Atlanta, Georgia. Located on U.S. Highway 29, Interstate Highway 85, and Alabama Highways 14 and 147, transportation facilities include the Greyhound and Ingram Bus Lines, the Western Railway of Alabama, and an excellent airport.

Auburn's Three Functions Today

The official seal of Auburn University carries three words, Instruction, Research, and Extension, indicating the three functions through which the institution serves the State.

Through INSTRUCTION it trains leaders for the economic and social life of the state, region and nation.

Through RESEARCH, basic and applied, it seeks to enlarge and verify the major bodies of knowledge and to find solutions to problems confronting industrial, agricultural and professional groups.

Through EXTENSION, it conveys to the people of the State the findings of research and its application to the improvement of working and living.

INSTRUCTION

There are 10 academic schools incorporated in Auburn University, including 48 departments for specialized study. Baccalaureate, masters' and doctoral degrees are offered and awarded on a basis of high standards. A strong graduate program strengthens undergraduate areas and all research programs. Military instruction is offered through the Schools of Military, Naval and Air Science.

That technical and occupational education have cultural value is the fundamental doctrine of the land-grant institutions. As the increase in technical knowledge puts greater claim on the student in a professional curriculum, the importance of his liberal education becomes even greater. Improvement of the humanistic-social stem of the technical curricula is an aim in each school.

RESEARCH

Chiefly because of lack of subject matter for instruction, the land-grant college upon its inception accepted responsibility for discovering and organizing knowledge in fields relating to agriculture. The purposes of research at Auburn University suggested in the Hatch Act of 1887 provided for establishment and support of agricultural experiment stations. Its objectives were to conduct research bearing on the agricultural industry, to aid in acquiring information on subjects connected with agriculture, and to promote scientific investigation into the principles and applications of agriculture.

In 1929 an Engineering Experiment Station was established to assist industries in the State to improve manufacturing processes to study undeveloped natural resources and methods by which they may be converted into marketable products. Its services are available to industry, governmental agencies, and to citizens of the State.

In 1944 the Auburn Research Foundation was incorporated and the Research Council formed to further research, to discover and develop research talent, to cooperate with all agencies for the betterment of the South, to foster and encourage learning in natural science, social science, the humanities, agriculture, engineering, and to promote liberal and practical education in the several pursuits of life.

As of January, 1963, research contracts amounting to $2,043,277.00 were awarded Auburn University for current study.

Furthering the frontiers of knowledge in all areas and discovering new and better ways of doing things through broadened programs of research are continuing objectives of the University as it seeks to discharge its responsibility to the people of Alabama.

At Auburn research and extension are functions coordinated with instruction. Private individual research by members of the faculty and graduate students is encouraged and extensive programs of basic and applied research are continually conducted throughout the institution.

EXTENSION

Extending the results of research and instruction and countless other services directly to the people of the State in the cities and on the farms; in organized classes and in the home; by lecture, demonstration, publications and otherwise has long been a major responsibility of the institution. Leaders of land-grant colleges, never content with confining their efforts to helping those who come to the campus, have gone into the far corners of the State serving the people and giving them the benefit of knowledge they have acquired through instruction and in the laboratories and on the farms.

Since the passage of the Smith-Lever Act in 1914, farm and home agents and specialists of the Agricultural Extension Service have carried specific and useful agricultural and home management information to people on the farms. Results have been higher crop and livestock production, improved soils, diversification, better marketing facilities, more machinery, more pleasant homes, and less drudgery.

The Engineering Extension Service and Cooperative Engineering Program, established in 1937 to extend to citizens, government and industries off the campus the use of all facilities of the Division of Engineering, have promoted a program of cooperative education for business and industry and have conducted short technical courses and conferences on the campus for the personnel of industry.

Auburn has long felt its responsibility in the field of general extension. Off-campus instruction is available through the Field Laboratory Program which enables teachers in service to work toward a graduate degree. The local school is also utilized as a laboratory in which graduate study in educational foundations is provided as a framework for solving instructional problems.

Through the cooperation of city, county and regional libraries, books and other materials of the Auburn University Library have been made available to people throughout the State.

Over the Alabama Educational Television Network established in 1955 the best instructional and informational material the University has to offer is being broadcast to the people.

Countless other services are being extended to Alabama citizens through departments such as dramatic arts, education, English, horticulture, music and speech.

The Campus and Buildings

The campus of Auburn University contains 53 classroom, research, and service buildings. There are 17 women's dormitories; one major men's dormitory complex, housing 1113 students; a new athletic dormitory; 240 apartments for married students in the Forest Hills Apartments, a complex of 19 new buildings.

In addition, the Agricultural Experiment Station owns 15,945 acres of land at the 10 substations, five experiment fields, five forestry units, the plant breeding unit, the ornamental field station, and the main station at Auburn.

Considerable construction has been accomplished during the past three years, including a $2.5 million library, used for the first time in 1963. A Physical Science Center and Home Economics building were also completed during this year.

Through the Auburn Development Program, a new organization enabling Auburn alumni and friends to support the University, funds for the construction of a Nuclear Science Center were made available. The $1,017,000 Center, including 100 KW Reactor, is expected to be completed in 1964.

Direction of the Auburn University Development Program is under a 55-member board known as the Auburn University Development Council. All gifts obtained through the Development program are received by the Auburn University Foundation, a corporation created expressly for that purpose and administered by a seven-man board of directors.

A map of the campus, listing the buildings and their function is shown on the insert at page 32.

Experiment Station Properties

The Agricultural Experiment Station System of Auburn University owns 15,945 acres of land at the ten substations, five experiment fields, five forestry units, plant breeding unit, ornamental horticulture field station, and the main station at Auburn. Acreages and locations of the above mentioned units are as follows:

Main Station	Auburn	Lee	3,834
Substations:			
Black Belt	Marion Junction	Dallas	1,116
Chilton Area Horticulture	Clanton	Chilton	161
Gulf Coast	Fairhope	Baldwin	800
Lower Coastal Plains	Camden	Wilcox	2,539

North Alabama Horticulture	Cullman	Cullman	160
Piedmont	Camp Hill	Tallapoosa	1,409
Sand Mountain	Crossville	DeKalb	536
Tennessee Valley	Belle Mina	Limestone	755
Upper Coastal Plains	Winfield	Marion and Fayette	735
Wiregrass	Headland	Henry	523
Experiment Fields:			
Alexandria	Alexandria	Calhoun	90
Brewton	Brewton	Escambia	80
Monroeville	Monroeville	Monroe	80
Prattville	Prattville	Autauga	80
Tuskegee	Tuskegee	Macon	230
Plant Breeding Unit	Tallassee	Elmore	670
Ornamental Horticulture Field Station	Spring Hill	Mobile	7
Foundation Seed Stocks Farm	Thorsby	Chilton	180

In addition to the above, there are 1,960 acres at the Forestry Units in Autauga, Barbour, Coosa, and Fayette Counties.

Sources of Revenue

Auburn University derives its support from the State and Federal Governments and from other sources. Funds are as follows:

1. Direct annual appropriations made by the State for support, maintenance, and development of public education, including campus instruction, agricultural research, agricultural extension, engineering research, and educational television.
2. Special appropriation made by the State for buildings, purchase of lands, and improvements.
3. Funds derived from the original endowment of the institution under the Federal Land-Grant Act and earnings from other subsequently acquired endowment funds.
4. Income derived from the payment by students of fees and other charges. All tuition at Auburn University is free, except to non-residents of Alabama, but certain fees are assessed to cover specific services.
5. The Morrill fund appropriated by the United States Government for the instruction of students in the sciences relating to agriculture and the mechanic arts and in the English language, literature, and for the training of teachers in agriculture and the mechanic arts.
6. Funds received from the State of Alabama through the Smith-Hughes Act derived from the congressional appropriation and paid to Auburn University for its work in the training of teachers of agriculture and home economics.
7. Such revolving funds as may be incident to the operation of any department where it is advisable to sell or dispose of products produced in the course of conducting the Experiment Station or any department of the institution.

8. Gifts, grants, and donations received from alumni, private individuals, and organizations both for general and restricted educational purposes, including scholarships.
9. Direct annual appropriations made by the United States Government for research purposes and devoted to investigation of scientific agritural problems of the farmers of the State. These funds are also for research purposes in connection with investigation of new experiments bearing directly on the production, manufacture, preparation, use, distribution, and marketing of agricultural products, and research work regarding Home Economics, and for the purpose of publishing these results.
10. Direct appropriations made by the United States Government for the Agricultural Extension Service in support of County Agricultural and County Home Demonstration Agents, for the support of boys' and girls' 4-H club work, and for other types of extension work in agriculture and home economics in the several counties of Alabama.
11. Each county in the State makes certain appropriations to supplement those from the United States Government and the State of Alabama for the support of the Agricultural Extension Service.
12. Funds received from industry, governmental agencies, and private individuals for special contractual research projects which are handled through the Auburn Research Foundation, Inc., and the Agricultural Experiment Station.

The Academic Program

Purposes of Auburn University

To maintain a community of learning where knowledge may be preserved, disseminated, and increased. (This is the fundamental purpose of all universities. To the extent that it fulfills this basic purpose of a university, Auburn University will fulfill its several particular purposes which are listed below.)

To provide the opportunity to all qualified young people of the State, regardless of their economic or social background, for a "liberal and practical education."

To provide the State, the region, and the nation with educated young people who have the disciplined minds, the knowledge, and the skills to contribute needed leadership and services to society and who will help perpetuate the moral and political values upon which our society is based.

To conduct a broad program of public and private research, basic and applied, for the general increase of human knowledge, for the benefit of society in meeting its scientific, economic and social problems, and for the stimulation of the faculty and students in their quest for knowledge.

To carry knowledge and its benefits to the people of the State by means of extension programs and the use of the mass media of communications in order to help all citizens improve their technical and cultural capabilities.

To conserve our cultural heritage through support of scholarly and creative work in the humanities, social sciences, and the arts so that the University may serve both students and citizens of the State as a focal center where the cultural traditions of our civilization are kept alive and transmitted to the future.

To engage constantly in an examination of the particular objectives, goals and programs of the University in the light of new knowledge and of changing social conditions; and as a part of this constant re-examination, to seek ever more efficient and economical means of fulfilling the University's purposes.

The above statement of the purposes of the University was adopted by the Committee on University Objectives during the 1961-63 Self-Study.

Fields of Study

Auburn University offers work in many fields. The student has an opportunity for specialization and the pursuit of particular interests in the several Schools including the Graduate School.

For instructional purposes, the University is organized into the following Schools: Agriculture, Air Science, Architecture and the Arts, Chemistry, Education, Engineering, Home Economics, Military Science, Naval Science, Pharmacy, Science and Literature, Veterinary Medicine and the Graduate School.

Instruction is given in each School through four quarters of approximately 11 weeks, with the fourth quarter serving as the summer session.

Resident instruction in the University is offered through Schools and Departments as indicated below. Regular curricula offered and degrees conferred by the several Schools are also listed.

School of Agriculture, includes the Departments of Agricultural Economics, Agricultural Engineering, Agronomy and Soils, Animal Science, Botany and Plant Pathology, Dairy Science, Forestry, Horticulture, Poultry Science, and Zoology-Entomology. Curricula offered are: *Agricultural Science, Agricultural Administration, Agricultural Engineering, Biological Sciences, Forest Management, Ornamental Horticulture, and Wood Technology.* Within each curriculum students are permitted to major in line with their special interests.

Degrees: Bachelor of Science in Agriculture, Agriculture (Dairy Manufacturing), Agricultural Administration, Agricultural Engineering, Biological Sciences (Botany, Zoology, Entomology, Fisheries Management, Wildlife Management), Forestry, Ornamental Horticulture, Wood Technology.

School of Air Science, includes the Department of Air Science and offers training in Air Science.

School of Architecture and The Arts, includes the Departments of Architecture, Art, Building Technology, Dramatic Arts, and Music. Curricula offered are: *Architecture, Building Construction, Dramatic Arts, Industrial Design, Interior Design, Music (Majors in Applied Music, Theory and Composition, and Music History and Literature), and Visual Arts.*

Degrees: Bachelor of Architecture, Arts, Building Construction, Industrial Design, Interior Design, Music, Visual Arts.

School of Chemistry, includes the Departments of Chemistry, Chemical Engineering, and Laboratory Technology. Curricula offered are: *Chemistry, Chemical Engineering, and Laboratory Technology.*

Degrees: Bachelor of Science in Chemistry, Chemical Engineering, Laboratory Technology, Medical Technology.

School of Education, includes the Departments of Agricultural Education; Elementary Education; Secondary Education; Administration, Supervision, and Guidance; Health, Physical Education and Recreation; and Psychology. Undergraduate curricula offered are: *Agricultural Education, Industrial Arts Education, Elementary Education, Secondary Education (majors or minors in Art; Business Education; Dramatic Arts; English; Foreign Languages; Health, Physical Education and Recreation; Home Economics Education; Mathematics; Mental Retardation; Music; School Library Services; Science; Social Science; Speech; and Speech Correction), and Psychology.*

Degrees: Bachelor of Arts, Bachelor of Science in Education, Agricultural Education, Home Economics Education.

School of Engineering, includes the Departments of Aeronautical Administration, Aerospace Engineering, Civil Engineering, Electrical Engineering, Engineering Graphics, Industrial Laboratories, Industrial Management, Mechanical Engineering, Textile Technology, and Auburn School of Aviation. This School offers curricula in *Aeronautical Administration, Aerospace Engi-*

neering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Industrial Management, Textile Management, and Textile Science.

Degrees: Bachelor of Aeronautical Administration, Aerospace Engineering, Civil Engineering, Electrical Engineering, Industrial Management, Mechanical Engineering, Textile Management, Textile Science.

School of Home Economics, includes the Departments of Clothing and Textiles, Family Life and Early Childhood Education, Foods and Nutrition, and Home Management and Family Economics. Curricula offered are: *Home Economics (majors in Clothing and Textiles, Foods and Nutrition, Home Management and Family Economics, Family Life and Early Childhood Education), and Nursing Science.*

Degrees: Bachelor of Science in Home Economics (Clothing and Textiles, Foods and Nutrition, Home Management and Family Economics, Family Life and Early Childhood Education), and Bachelor of Science in Nursing.

School of Military Science, includes the Department of Military Science and offers training in Military Science.

School of Naval Science, includes the Department of Naval Science and offers training in Naval Science.

School of Pharmacy, includes the Departments of Pharmacy, Pharmaceutical Chemistry, Pharmacology, Pharmacognosy, Pharmacy Administration, and offers a curriculum in *Pharmacy.*

Degree: Bachelor of Science in Pharmacy.

School of Science and Literature, includes the Departments of Economics and Sociology, English and Journalism, Foreign Languages, History and Political Science, Mathematics, Philosophy, Physics, Religious Education, Speech, and Secretarial Training. Curricula offered are: *Science and Literature (majors in liberal arts subjects), Pre-Law, Business Administration, Secretarial Administration, Applied Physics, Physics, and Pre-Professional Science (Pre-Medicine, Pre-Dentistry, and Pre-Veterinary Medicine).*

Degrees: Bachelor of Arts, Bachelor of Science, Bachelor of Science in Business Administration.

School of Veterinary Medicine, includes the Departments of Anatomy and Histology, Bacteriology, Pathology and Parasitology, Physiology and Pharmacology, Surgery and Medicine, and offers a curriculum in *Veterinary Medicine.*

Degree: Doctor of Veterinary Medicine.

The Graduate School administers programs leading toward the degrees of Master of Arts, Master of Science, Master of Agriculture, Master of Agricultural Education, Master of Fine Arts, Master of Building Consrtuction, Master of Business Administration, Master of Education, and Master of Home Economics. Beyond the Master's degree, a program is offered toward the degree Specialist in Education, and doctoral degree programs leading to the degrees Doctor of Education and Doctor of Philosophy.

Library Facilities

A new Auburn University Library, four stories high with study capacity for 2,000 students and room for one million volumes, opened its doors for the first time in January, 1963. It is centrally located and organized to serve most efficiently the three divisions of Instruction, Research, and Extension.

Spacious reading rooms are separated by glass walls, to give a panoramic view of each floor, with fluorescent lights, contemporary furniture, and open book stacks aiding the student in his study.

The Library also contains 98 closed carrels for the use of faculty members and graduate students engaged in library research, a special microfilm reading room, seven rooms for listening to recordings and a projection room with theater seats to accommodate 108 where special educational films may be viewed. The building is completely air-conditioned and contains the only public elevators on the campus.

In January, 1963, the Library contained approximately 350,000 volumes, and many thousands of state and federal government publications. Materials issued by the various branches of the federal government by the Atomic Energy Commission are received on depository account.

Experiment station bulletins in both agriculture and engineering are available. Thousands of books, dissertations, and documents are received on microfilm and microcards, as well as important newspapers and periodicals. More than 5,000 serials are being received currently; back files are available for a large portion of these titles.

The Library contains several valuable special collections, most of which were given by friends or patrons. Among these are the George Petrie Memorial Collection, presented by Miss Kate Lane; the Flagg Architecture Library, given by the Alabama Institute of Architects; the Hodson Collection on the History of Agriculture, presented by Mr. Edgar A. Hodson, Arkansas State Agronomist; the personal library of the late Mrs. Ross, widow of Dr. B. B. Ross, a member of the faculty for many years; and an excellent sports collection, donated by Mr. C. W. (Bill) Streit of Birmingham. The Library also maintains a collection of documents and publications in Alabama history and government along with the papers and publications of the University in the Alabama Room.

Borrowing privileges are extended to the members of the administrative, research, instructional, and extension staffs of the University, also to governmental departments and agencies located in Auburn. Loan privileges are also extended to all citizens of the State by inter-library loan requests through their local libraries; to all students in residence; and to active, honorary, or research members of the Auburn Research Foundation.

Books which are needed for reserve use by the various classes are to be found at the reserve desk on the first level. There is also a large reserve reading room, a general reading room, the special collections department, a projection room and a browsing room on this floor where popular and contemporary books, magazines and newspapers are available.

Housed on the second floor are the humanities department, the bibliography room, the technical services department, the circulation department, and the administrative offices.

The third floor is devoted entirely to the social sciences, and the fourth floor is used for the biological and physical sciences.

Correspondence Study Program

The Correspondence Study Program provides undergraduate instruction for persons unable to attend college on a regular basis. Correspondence courses parallel those given in the University and are taught by members of the University faculty. All courses carry college credit.

Organization of Courses – A complete course outline with full information and instructions is sent to the student upon registration. Courses consist of varying amounts of credit and numbers of units. Each work unit requires certain textbook readings and written preparation. Supplementary reading and reports may be required of the student by the instructor on any assignment. Written work is submitted to the Correspondence Study Office.

Qualifications – Any person who might profit from college level courses is eligible to enroll. No entrance examination is required for admission to correspondence study, but the right is reserved to reject any applicant who does not furnish complete or satisfactory data on the formal application. Enrollment for correspondence study does not constitute admission to Auburn University.

Restrictions placed on Auburn University students regarding correspondence work are described in the regulations in Section III of the Correspondence Study Bulletin. The use of correspondence work in regular programs at Auburn University is explained on page 52 of this Bulletin.

Credit – Undergraduate quarter-hour credit equivalent to that earned in regular college classes is given for correspondence work. (Credit allowed for each course is indicated in the course listing in the Correspondence Study Bulletin.) Although graduate credit cannot be earned by correspondence, certain undergraduate deficiencies may be cleared.

Examinations – A final examination is required in each course upon completion of all unit work. The examination should be taken in the Correspondence Study Office but may, on approval, be taken elsewhere under the supervision of an approved proctor. Proctors approved are city or county superintendents of schools, principals of accredited senior high schools, and/or deans and department heads of colleges. Students in military service may arrange to take the examination under the supervision of the Education Officer of their station.

Fees – The fee for each course is $10.00 for the first quarter hour of credit and $5.00 for each additional hour. Fees are payable in advance and should accompany the application.

For application form and further information write to Robert L. Saunders, Director, Auburn University Correspondence Study Program.

Information For New Students

Admissions

Admission to Auburn University, in keeping with the land-grant tradition, is open to men and women in all economic stations, giving them the benefits of higher education formerly reserved to the few. Auburn is a university of the people and for the people.

Because of the large number of applications, credentials should be filed at the earliest possible time. In every case, complete admission credentials must be filed at least three weeks prior to the opening of the quarter in which admission is desired. The University reserves the right, however, to establish earlier deadlines should the number of applicants exceed the number of students who can be adequately instructed or housed. Application forms may be obtained from the Admissions Office.

Applicants may be admitted to curricula in any quarter, with the exception of Architecture, Interior Design, and Veterinary Medicine, to which curricula they are admitted in the Fall Quarter only. For admission of out-of-state applicants, see page 24. For special requirements for admission to Architecture, see page 72; Engineering, page 108; Pharmacy, page 134; Veterinary Medicine, page 146.

General Requirements

Applicants may be admitted when general requirements herein stated have been satisfied and when on the basis of complete official transcripts the applicant has been officially notified of his acceptance. Auburn University in the interest of good instruction reserves the right to reject any and all applicants whose admission would result in the overcrowding of instructional and housing facilities.

Applicants for admission will be considered in terms of their academic preparation, mental capacity, and aptitude for the course of study desired; morality; health; and psychological fitness for the environment, traditions and customs of this institution. In submitting admission credentials, the applicant must give requested information fully and accurately. False or misleading statements can result in denial of admission or cancellation of registration.

High school students expecting to apply for admission to Auburn University are advised to emphasize in their programs the following subjects: English, mathematics, social studies, sciences, and foreign languages. A maximum of four units will be allowed in vocational subjects.

American College Tests

Freshman applicants are required to complete the American College Tests (ACT) on one of the announced state-wide testing dates. High school seniors may secure application forms and information regarding the tests from their principals. American College Test scores are used as a partial basis for admission, for placement in English and mathematics, and for awarding university-

administered scholarships and loans. The Scholastic Aptitude Test (SAT) of the College Entrance Examination Board will be accepted in lieu of the American College Tests for applicants from states where this test is required.

Graduates of accredited Alabama secondary schools who attain composite scores of 16 or above on the American College Test and who present satisfactory grades in college preparatory courses are academically eligible for admission. Repetition of the American College Test until the minimum score is attained does not alone provide assurance of admission.

Physical Examination Report

Each applicant must complete and return, at least three weeks prior to the opening date of the quarter in which admission is desired, a **physical examination report** on a form which the University will furnish. The University reserves the right to require any student to submit to such additional medical examinations as are believed advisable for the protection of the University community, and to refuse admission to any applicant whose health record indicates a condition which college work could affect adversely or which would be harmful to the students of the University.

Any applicant who fails to comply with this requirement will not be admitted to Auburn University.

Placement Tests

Freshmen are sectioned in English and mathematics on the basis of college aptitude and placement test scores. Attendance at placement tests during the orientation period is required. A student absent from any placement test will be assessed $1.00.

Admission To Freshman Class

The requirement for admission shall be graduation from an approved secondary school with a minimum of fifteen units (or twelve such units from a three-year senior high school) or the equivalent of this requirement as shown by examination. (See "early admission" plan under Advanced Standing Program below.)

Non-resident applicants must have graduated from an accredited high school with an over-all average of "C" and have attained a composite score of 18 on the American College Tests or a total score of 800 on the College Entrance Examination Board's Scholastic Aptitude Test.

High school graduates who do not meet the above standards may apply for admission. Such applicants will be considered on an individual basis, and any one or any combination of the following types of evidence may be used in appraising the eligibility of the applicant for admission: a personal interview, high school grades, rank in class, recommendation of the high school principal, and/or review of the results of tests already given or which may be required.

Non-graduates of mature age may be admitted to full freshman standing if scores made on the USAFI General Educational Development Tests, the American College Tests, or other standard college aptitude tests, and/or such special achievement tests or subject examinations as may be recommended by

the Committee on Admissions, indicate educational attainment equivalent to graduation from a four-year high school. Students entering from non-accredited schools may be accepted if they make satisfactory scores on tests prescribed by the Committee on Admissions.

Requirements In Mathematics

One unit of college preparatory mathematics is required for admission to all curricula. This must be a course in basic or fundamental mathematics specifically designed to include the study of the deductive nature of mathematics, and cannot be replaced by such courses as business mathematics, personal finance, general mathematics, etc.

A second unit of college preparatory mathematics is required for all curricula which include MH 111 – Introductory College Mathematics, and a third unit for Interior Design and those curricula requiring mathematics beyond the freshman year. The second unit must be principally the study of geometry, including the geometry of three dimensions. The student planning to study engineering or architecture should take a fourth unit including advanced algebra and trigonometry. Students admitted with entrance deficiencies must clear them before registering for MH 111.

Advanced Standing Program

Under the Advanced Standing Program, able students of superior preparation are afforded the opportunity of being placed in programs suited to their abilities and preparation for college study. Some exceptionally able students may be admitted prior to high school graduation. High school graduates of superior achievement may be able to qualify for advanced placement and for credit which may count toward degree requirements.

Early Admission – Students of high academic promise may be admitted directly from the eleventh year of school without the secondary school diploma. Basic requirements for early admission are:

1. Proper personal qualifications.
2. Superior competence and preparation as evidenced by the high school record, and by satisfactory scores on pre-admission aptitude tests, College Entrance Examination Board achievement tests in English, Mathematics, and History or a science, pre-registration placement tests, or proficiency tests administered by appropriate departments at Auburn University.
3. A letter from the principal recommending the applicant as to emotional and social maturity and readiness for college work, and indicating approval of his early admission.

Information and blanks may be obtained from the Admissions Officer.

Advanced Placement – Entering freshmen who demonstrate superior preparation are accorded the opportunity of qualifying for advanced placement and/or credit, not to exceed a total of 45 quarter hours, in the following areas: Biology, Botany, Chemistry, English, Foreign Language, History, Mathematics, Physics, and Zoology.

Advanced placement or credit may be granted to entering freshmen who during their senior year in high school have made satisfactory scores on the College Board Advanced Placement Examinations.

A student with special competence in a specific area, as evidenced by high school grades and scores on college ability or achievement tests, may apply for a departmental examination which may qualify him for advanced placement or credit in that department.

The amount of credit allowable through advanced placement is determined by the dean and the department head concerned. A brochure describing the Advanced Standing Program will be forwarded by the Registrar upon request.

Admission Of Transfer Students

Advanced standing is granted to students transferring credits from accredited colleges. Undergraduate transfer applicants must have satisfactory academic and citizenship records and must be eligible to re-enter the last institution attended. Applicants must submit two official transcripts of record from each institution attended. Residents of Alabama must have earned from all work attempted credit hours and grade points equal to the following percentage schedules: one to four quarters of attendance, 60 per cent; five to seven quarters, 70 per cent; eight quarters and beyond, 80 per cent. Out-of-state residents must have a cumulative grade point average of 1.0 (C) on all college work attempted. Graduates of accredited institutions seeking admission to an undergraduate school of Auburn University will not be required to meet the percentage of "C" average regulations stated above.

Unless high school credits are shown on the college transcript, one transcript of the high school record must be filed. Students transferring from colleges not satisfactorily accredited will be granted provisional admission or may be required to stand examinations in all subjects for which credit is desired. The University reserves the right to require entrance examinations of those applicants transferring from colleges with which the University has had no experience. The amount of advanced standing credit allowed will be determined by the dean and the Registrar. Credit for "D" grades will be allowed as approved by the dean except that credit is allowed in Freshman English only on grades of "C" or better.

Admission To Graduate Standing

Graduation with a Bachelor's degree or its equivalent from an accredited college or university is requisite for admission to the Graduate School. The undergraduate preparation of every applicant for admission must also satisfy the requirements of a Screening Committee of the school or department in which he desires to major. For further information see section on The Graduate School and write for special catalog.

Admission Of Special Students

Persons at least 20 years of age who cannot fulfill the regular admission requirements for freshman standing but otherwise have acquired adequate preparation for university courses may be admitted as special students on approval of the dean concerned. To become a candidate for a degree, a special student must meet entrance requirements.

Non-Resident Students

Because of limited facilities and in the interest of good instruction, admissions are restricted, except in the case of children of alumni, to residents of Alabama and neighboring states.

In assessing fees students are classified as resident and non-resident students. In addition to fees charged to Alabama students, non-resident students are required to pay a tuition fee of $100.00 per quarter. This fee is remitted to sons and daughters of ministers. No tuition is charged to Alabama residents.

A resident student, if under 21 years of age, is one whose parents (or guardian) have been residents of Alabama for at least six consecutive months next preceding his original enrollment, or whose parents were residents of Alabama at the time of their death, and who has not acquired residence in another state. In all cases of guardianship, the period of guardianship must have been not less than six months at the time of original enrollment. If the parents are divorced, legal residence will be determined by the residence of the parent to whom the courts have granted custody.

A resident student, if over 21 years of age, is one whose parents are, or were at the time of their death, residents of Alabama, and who has not acquired residence in another state; or who, as an adult, has been a resident of Alabama for at least six consecutive months next preceding his original enrollment; or who is the wife of a man who has been a resident of Alabama for at least six consecutive months next preceding his original enrollment.

All students not able to qualify as resident students are classified as non-resident students. If there is any possible question of his right to legal residence the applicant should bring the matter to the attention of the Registrar before registering. The burden of proof as to residence is upon the student. Any student who registers improperly under these regulations will be required to pay not only the non-resident fee but also a penalty fee of $10.00. A student who does not clear this obligation within 30 days after official notice will have his registration cancelled.

Title 17, Article 2, Section 15 of the 1940 Code of Alabama, provides that residence may not be acquired by attendance at an institution of higher learning. No person who is once registered as a non-resident student shall be considered to have gained legal residence in Alabama by virtue of having attended college in this State or by residence in Alabama while a participant in the Auburn University Co-operative Program. Persons whose legal residence follows that of parents or guardians shall be considered to have gained or lost legal residence in this State while in college according to changes of legal residence of parents or guardians, but legal residence shall not be considered to have been gained until six months after such persons have become legal residents of this State.

Living Accommodations

The over-all dormitory program is operated on the basis that a university education is not confined to classroom activities. A true university education includes the total experience of living within an educational environment. A schedule of activities, student government, and a diversified program which the residents help plan and in which they participate are important parts of university education.

In all University dormitories and apartments, careful precautionary measures are taken to assure the security of the residents and their personal property. However, the University does not insure personal property of the residents and is not responsible for damage to or loss of personal property of occupants of University-owned facilities.

The University reserves the right to inspect the rooms of students living in University housing at periodic intervals.

Men Students

Auburn University provides dormitory accommodations for approximately 1325 men students. The men's dormitories are in two areas, Magnolia Dormitories and the Plainsman Dormitory.

Magnolia Dormitories, housing 1113 men students, is a three-building unit in the northwestern part of the campus. All units are of brick, hollow-tile, and steel construction and together form one of the best-equipped resident areas for college men in the South. Magnolia Hall was completed in 1948, Bullard Hall was completed in 1952, and Noble Hall was opened in January of 1957. Each of these buildings is connected with another to form a harmonious architectural and living pattern. All buildings are arranged into divisions of approximately 40 students. These residents sharing the experience of living together form the basis of the dormitory program. There is a dormitory counselor for each division. The Dormitory Counselors are assisted by Graduate Counselors under the direction of the Resident Counselor and the Dormitory Manager in carrying out the dormitory program.

In the Magnolia Dormitories two students share a room. Each student has his own single bed, closet, and study table. The dormitory contains well-appointed lounge and recreational areas, a post-office, a snack bar, and other facilities to make a complete living unit. The Housemothers, the Resident Counselor, and the Family in Residence have their apartments in the buildings.

Plainsman Dormitory, which houses 144 men students, is equipped with dining facilities and is supervised by a resident staff member. There are two boys in each of the 72 rooms, with separate study hall and lounge.

In addition to the dormitory housing accommodations for men students, housing may be obtained in private dormitories and homes in Auburn, and in the fraternity houses. The Student Affairs Office maintains for the convenience of students a file of off-campus accommodations for men.

Women Students

Housing for approximately 1700 women is furnished in the Women's Dormitories. The main dormitory group consists of the following:

No.	Name	No.	Name
I	Elizabeth Harper Hall	VIII	Ella Lupton Hall
II	Kate Conway Broun Hall	IX	Helen Keller Hall
III	Willie Little Hall	X	Marie Bankhead Owen Hall
IV	Kate Teague Hall	XI	Annie White Mell Hall
V	Letitia Dowdell Hall	XII	Dana King Gatchell Hall
VI	Allie Glenn Hall		Alumni Hall
VII	Mary Lane Hall		Auburn Hall

Harper, Broun, Little, and Teague Halls, Social Center and the Women's Dining Hall form a Quadrangle in the foreground of the dormitory area. The Dining Hall faces the other dormitories located to the south of the Quadrangle. Each of the dormitories, I through X, houses approximately 100 girls. A Head Resident, who has a suite of rooms in the building, is in charge of each dormitory. The Head Resident serves as counselor to the students as well as hostess in the dormitory. Lounge space is furnished in each building. The bedrooms in dormitories I through X are arranged in suites, consisting of two double rooms, connected by a tile bathroom. Each room accommodates two girls; however, three may be assigned to a room on a temporary basis when the dormitories are unusually crowded. The rooms are equipped with twin beds, a double desk with two desk chairs, a reading lamp, a bedside table, an easy chair, and two chests. All students provide their own bed linens and any other items they may wish to use in making their rooms more attractive.

Dormitories XI and XII are smaller dormitories, housing approximately 50 girls each. They are located on Mell Street, adjacent to the other dormitories. These dormitories have community baths, located at the end of the hallways and are furnished in a manner similar to the other dormitories. There is a Head Resident in each of these dormitories, also. Dormitory XII, Dana Gatchell Hall, is a cooperative dormitory. Here the girls prepare their own meals and do their cleaning; as a result, the cost of room and board is much less than it is in the other dormitories.

Alumni Hall is located on South College Street. This unit houses approximately 100 girls with the Head Resident's suite located on the second floor. This dormitory has its own dining hall, located in the basement of the building. The furnishings in Alumni Hall are the same as in the other dormitories. The rooms are not in suites, and there are community baths located at each end of the hallways.

Auburn Hall, housing 182 girls, is the largest women's dormitory. This dormitory has community baths located conveniently for the girls on each floor. There are a Head Resident and an Assistant Head Resident for this dormitory. The girls living here take their meals in Alumni Dining Hall. Auburn Hall is located on East Thach Avenue, approximately two blocks from Alumni Hall.

Social Center is a southern colonial building in which are located the offices of the Dean of Women, the Assistant Dean of Women, the Assistant to the Dean of Women and the Dormitory Supervisor. Here, also, is a cashier's office where women students pay room and board. The post office for Dormitories I through XII is located in this building. In addition, there are two large living rooms, a dining room, and a kitchen which may be used by student groups.

In the fall of 1962 a new group of dormitories was opened, located in the area in front of the President's Home and called the South Women's Dormitories. There are three dormitories here housing 110 girls each. At the present time the dormitories are designated by the letters A, B, and C. The rooms are arranged in suites, with a connecting bath between each two double rooms. There is a formal lounge and an informal lounge in each dormitory, and study rooms on each floor. The buildings are completely air conditioned and each room is furnished with twin beds, a bedside table, two desks and desk chairs, a double dresser and an easy chair. A Head Resident is in charge of each of these residence halls. A dining hall is located in this area to serve the girls living

there. There is also an administration building, similar to Social Center, where the office of the Head of Women's Housing is located and where the cashier's office and the post office for this area are found. There are several attractive lounges in the building. Eventually ten dormitories will be built to complete this dormitory group.

Residence in the dormitories is compulsory for all women students unless the Dean of Women gives them special permission to live elsewhere. Students will be subject to regulations of the University and the Women's Student Government Association at all times.

All students residing in the dormitories must eat in the University dining halls. Meals are served here under the supervision of trained dietitians. Costs for special diets will be borne by the student.

No room reservation in the women's dormitories is binding until a fee of $25.00 has been received. This should be sent to the Head of Women's Housing. For room and board charges see page 29.

Married Students

Auburn University operates two housing projects for married students:

A. **Forest Hills Apartments** – 240 units, 80 two-bedroom and 160 one-bedroom apartments, furnished, completed September, 1959. Furnishings include an all-electric kitchen, completely furnished living room and bedroom, spacious closets, ample cabinets, all-tile bath with shower-tub combination, inner-spring mattresses, steam heat, TV outlet, etc.

B. **Graves Centre Apartments** – 90 units, one-, two-, and three-bedrooms, temporary, partly furnished.

Deposits are accepted for Forest Hills Apartments from prospective married male students who have been accepted by the Registrar. Deposits for Graves Centre Apartments are accepted from married male undergraduate Auburn University students only. For additional information write: A. A. Miller, Housing Manager, 901 West Thach Avenue, Auburn, Alabama.

The Student Affairs Office, 101 Samford Hall, maintains a registry of privately owned apartments and will be glad to assist incoming students in locating suitable housing. All arrangements should be made before the student brings his family to Auburn.

Room Reservations

1. Women students wishing to reserve a room in university housing should send a deposit of $25.00 to Head of Women's Housing. Reservation for the following Winter, Spring, Summer and Fall Quarters will be accepted on or after October 1 of each year.

2. Inquiries regarding rooms for men students should be addressed to the Manager of Magnolia Dormitories. Applications for any quarter will be accepted three quarters in advance except for the Fall Quarter. Inquiries concerning Fall Quarter applications will be accepted after January 1 each year. These inquiries will be numbered in the order of receipt by the Dormitories Office and applications will be mailed on the first of April. The application form with a $25.00 check payable to Auburn University for room reservation deposit, should be returned to the Manager, Magnolia Dormitories, as soon as

possible. Room reservation deposits will be held to cover loss of and/or damage to dormitory property. Room reservation deposit is not applicable to room rent.

3. Refund of room reservation fees may be made under the following conditions: (1) When reservations for the Fall Quarter are canceled on or before August 15, prior to the beginning of the Fall Quarter; (2) when reservations for the Winter Quarter are canceled on or before December 15; (3) when reservations for the Spring Quarter are canceled on or before March 1; (4) when reservations for the Summer Quarter are canceled on or before May 15; (5) when room is vacated at the end of the quarter and no future reservations are desired; (6) when a resident enters military service during the quarter. No refund of reservation fees will be made under circumstances other than those outlined above.

Room And Board Charges

MEN'S DORMITORIES

Room and board for men students in Magnolia Dormitories is $180.00 per school quarter. Magnolia Dormitory residents may elect to take meals in the dining halls or elsewhere. Those eating in the dining hall may take meals seven days per week at $120.00 or five days per week at $102.00 per quarter. Those eating outside the dormitory will only pay the $60.00 per quarter room rent. All board charges are subject to payment of applicable sales tax.

Students who, at the beginning of the quarter, elect to have meals in Magnolia Dining Hall may withdraw from such arrangements within the first two weeks of the quarter and receive a refund of amounts paid, **less a minimum charge for board for two weeks plus a $7.50 surrender charge, upon return of meal tickets issued.** No change in board arrangements may be made by dormitory residents after the two-week period has expired. Students withdrawing from the dormitory or resigning from school after the allowable two-week period will be charged on a daily basis plus the $7.50 surrender charge.

Room and board bills are to be paid at the office in each of the dormitory areas. Accounts not cleared on or before the fifth day of the current month or sixth day of the term in which the office is open for business, whichever date comes earlier, are subject to a late fee of $1.00 per day to a maximum of $5.00. All room and board accounts are due and payable in full at the beginning of each quarter. However, where deemed necessary, arrangements may be made at the Cashier's Office in the student's dormitory area for payment of the amount in not more than three installments. Such payments must be made at the beginning of the period they are intended to cover. For information in advance concerning part payments, write the Housing Manager in the Men's Dormitories or Women's Dormitories, as applicable.

Room assignments will be valid only through 5:00 P.M. of the 6th day after the dormitories officially open, unless the room has been paid for in advance or other satisfactory arrangements have been made before that date.

Authorized refunds of room rent will be made on a calendar week basis and board charges on a daily basis when students leave the University dormitories and dining halls. A minimum charge of ⅓ of the quarterly room rent rate will be charged any student vacating rooms after school opens, with refunds being made not to exceed ⅔ of the quarterly (12 weeks) rate. A calendar week

begins on Sunday. Students vacating dormitory rooms without proper notice to the dormitory office concerned will be charged rent on the room until such notice has been properly filed with the office that the room has been vacated.

Although every effort will be made to maintain the present room and board prices, if food prices advance abnormally, it may be found necessary to increase these costs.

For men students living in private dormitories, cooperative boarding houses, private homes, and fraternity houses, rooms without meals range from $50.00 to $70.00 for each school quarter. The meals in boarding houses near the campus are about $45.00 a month.

WOMEN'S DORMITORIES

Room and board in all non-air-conditioned Women's Dormitories is $180.00 per school quarter. Room and board charges in the new air-conditioned dormitories will be $200.00 per school quarter. All women students are required to take meals in the dormitory dining halls and board charges which are $110.00 per quarter are subject to payment of applicable sales tax.

Expenses and Financial Aid

Under the land-grant institution philosophy of education for all, Auburn's fees have remained low. Student charges are 17 per cent lower than similar fees charged in the Southeast and the nation as a whole. They have remained almost static over the past five years, a situation unique at Auburn in view of other rising costs.

Since living expenses are an integral part to be computed in college costs, subsistence at Auburn University is also considerably less than at comparable schools across the nation. Board and room for men figure at some 31 per cent less than the average, with women paying 21 per cent lower costs.

Auburn University reserves the right to deny admission to or drop any student who does not meet his financial obligations to the institution.

Fees are payable in advance at the beginning of each quarter registration as follows:

Basic Quarterly Charges For Regular Undergraduate Students

	University Fee	Student Activities Fee	Total
All curricula except Veterinary Medicine	$66.50	$8.50	$75.00
Veterinary Medicine	71.50	8.50	80.00

The University Fee is used to meet part of the cost of instruction, physical training and development, the cost of necessary laboratory materials and supplies for student's use, maintenance and operation of the physical plant, the Library and the Student Health Service.

The Student Activities Fee supports affairs on the campus, namely, intercollegiate athletics, Auburn band, debating, dramatic arts, glee clubs, Glomerata, intramural sports, Plainsman, religious life, social affairs, student gov-

ernment, and Student Union Building Fund. This fee includes 50 cents which will be held in reserve to cover unnecessary damage to University property by students. Any unused portion of this amount will revert to the credit of the activities listed in this paragraph.

Other Fees And Charges

(1) **Field Training Course in Home Economics** one-half of regular University and non-residence fees. (Student Activities Fee optional. If elected, full fee charged.)
Charged for: Retail Training – HE 335

(2) **Handling Charges** $1.00
(a) For registration fees billed home
(b) Unhonored checks returned from bank
(c) For delayed payment of registration fees
(Arrangements for paying registration fees and charges should be worked out in advance with College Bursar.)

(3) **Service and Penalty Charges for Late Registration** 2.00 to 15.00
(a) Students required to pre-register and who fail to pay fees at scheduled dates (from end of pre-registration dates to beginning of classes) 2.00
(b) All full-time undergraduate students from beginning of classes through last date for new registration for quarter 5.00
(c) Students failing to complete registration by payment or making satisfactory arrangement for fees with the Bursar by last day for new registrations for the quarter will be dropped from classes and may be reinstated by payment of late fees and penalty charges of $1.00 per elapsed class day in addition, up to a maximum penalty of $10.00 plus late fee. Maximum 15.00
(d) Late fees and penalties for graduate students and part-time students taking less than 10 quarter hours begin one week later than for undergraduates.

(4) **Non-Resident Fee** 100.00
Non-resident students with the exception of sons and daughters of ministers are required to pay a tuition fee each quarter.

(5) **Laundry and Dry Cleaning** (optional) 20.00
This fee is optional for both men and women students. Refunds, where deemed advisable, may be made during the first two weeks of the quarter. Thereafter, refunds will be made only in the case of resignation of the student. This service is furnished by Young's Laundry of Auburn and includes laundry, pressing, and dry cleaning.

(6) **R.O.T.C. Uniform and Equipment Deposit** (refundable) 30.00
All students, both Basic and Advanced, are required to deposit the sum of $30.00 with the Bursar of the University, prior to enrollment in R.O.T.C. They are then furnished a uniform in good condition and other necessary supplies through the R.O.T.C. Supply Office. Upon completion of the R.O.T.C. course of instruction, or upon withdrawal of the student there-

from, the uniform and other supplies are turned in and the deposit returned to the student, less $1.50 per quarter withheld by the Bursar of the University to cover the cost of cleaning and repair of uniforms, when applicable and to support R.O.T.C. activities as follows: scholarship and marksmanship awards; special apparel and equipment for competitive drill teams and rifle teams; approved travel for drill teams and rifle teams representing Auburn University R.O.T.C.; uniforms for sponsors; the official annual Military Ball in an amount not to exceed $.40 per cadet enrolled that quarter. This charge is subject to change in accordance with demands of the Army, Navy and Air Force training programs.

(7) **Chemistry Breakage or Pharmacy Breakage Card** (refundable) each 2.

(8) **Change in Course Fee** 1.
This charge is made for each separate change with dean's permission after classes begin.

(9) **Change in Curriculum Fee** 5.

(10) **Auditing Fee** Per subject 5.
Any student who pays less than full-time fees must pay this fee for auditing a subject.

(11) **Re-examination Fee** each 2.

(12) **Special Examination or Equivalency Examination Fee** each 5.

(13) **Pilot and Private Instruction Courses** Maximum (See No. 22 next page.) For description of these courses see section on Aeronautical Engineering.

(14) **Transcript Fee** 1.

(15) **Graduation Fee** 10.
This fee is payable at beginning of the quarter in which the student is a candidate for a degree.
Duplicate Diploma Fee 5.

(16) **Correspondence Study Course Fees** (each course) First hour 10.
And $5.00 for each additional credit hour.

(17) **Part-time Undergraduates** First hour 10.
Additional hours, total not to exceed 9 hours, at $5.00 each. No non-resident fee charged. Student Activities Fee optional. If more than 9 quarter hours carried, full undergraduate fees are payable. Six-week courses of 5 or more quarter hours call for payment of one-half regular undergraduate fees for a quarter.

(18) **Graduate Students** First hour 10.
Additional hours $5.00 each per quarter. Separate registrations for six-week term cost $10.00 for first hour and $5.00 per hour for each additional hour. Student Activity Fee optional, no non-resident fee charged. Graduate students registering for 10 hours or more will be entitled to student health service.

(19) **Thesis Only** (non-credit course) and/or Fee for registration to clear Incompletes when University facilities are used. 5

(20) Thesis Binding Fee Per copy 2.50
Number of copies required ranges from three to five.

(21) Music Fees

Applied Music – one ½ hour lesson per week	20.00
Applied Music – two ½ hour lessons per week	30.00
Applied Fundamentals of Music (Class instruction in piano or violin)	5.00
Practice Fee – per quarter – one hour per day	3.00
two hours per day	5.00
Instrumental Rental Fee – per quarter	3.00

(22) Special Pilot Training Fees – Special fees for the pilot training courses are:

AE 306 Private Pilot Training – Flight, maximum	423.18
AE 406 Commercial Pilot Training – Flight, maximum	2,100.00
AE 423 Flight Instructor Training, maximum	497.77

(Subject to change without notice.)

(23) Microscope Purchase
It is required that students entering Veterinary Medicine own a microscope prior to admission. (See section on Veterinary Medicine.)

(24) Registration Canceled and Fees Refunded
If a student pre-registers for the next quarter, then withdraws prior to the opening of the quarter, all fees are refunded. If a student resigns within the first two weeks after classes begin, all fees, less charges, will be refunded except the sum of $7.50 which will be retained as a registration fee, and except the sum of $5.00 paid as student health fee if the student has participated in any part of the student health program. If a student remains in school longer than two weeks after classes begin, no refund will be made of any fees applying for that quarter except on resignations caused by personal illness or call into military service.

(25) Room and Board – All women students, except those granted special permission by the Dean of Women, are required to live in dormitories and take their meals at the Women's Dining Halls. Residents in the dormitories for men may elect to take their meals in the dormitory dining halls, or elsewhere.
Rate: Room and Board, per quarter (add sales tax for board) 180.00
For further information, see room and board section. to 200.00

(26) Nursery School and Kindergarten

Main Nursery School (per quarter)	25.00
Auxiliary Nursery School (per quarter)	12.00
Kindergarten (per quarter)	15.00

For registration information, contact Chairman, Nursery School and Kindergarten.

(27) Internship Fee – Veterinary Medicine (off campus) 3.00
(on campus) 12.50

(28) Doctoral Dissertation microfilming fee 25.00

Room and board charges are listed on pages 28 and 29 for both men and women.

Map of Auburn University Campus

(Please Fold Out)

Financial Aid At Auburn

Auburn University has established an **Office of Student Financial Aid** to provide financial assistance to aid worthy students in meeting educational costs incurred while attending Auburn University.

A pamphlet describing scholarship and loan funds may be obtained by writing to the Office of Student Financial Aid, Auburn University.

Sources of aid not available through the Office of Student Financial Aid are as follows:

Students with physical handicaps may obtain grants-in-aid covering University fees, books, supplies, and, in some cases, general maintenance through the **Vocational Rehabilitation Service.** Federal and state appropriations support this service. For information and application blanks, contact Mr. Frank Jenkins, District Supervisor, Vocational Rehabilitation Service, 110 Thach Hall, Auburn, Alabama.

To promote scholarship and research among graduate students, a number of **Teaching Fellowships, Graduate Assistantships, and Research Fellowships and Assistantships** carrying substantial stipends are available. Apply not later than March 15. Contact the Dean of the Graduate School for information and application blanks.

The **U.S. Navy** offers to a number of students tuition and fees, plus an allowance for expenses, for four years. Recipients are determined after nation-wide selection. They enter college as Midshipmen, USNR, under the Regular NROTC program. In return for this aid, they must complete four years of Naval Science, make all required summer practice cruises, and upon graduation accept a commission as Ensign, U.S. Navy, or Second Lieutenant, U.S. Marine Corps. The Secretary of the Navy establishes the criteria for voluntary termination of an officer's status to meet the needs of the naval service. At the present time a required minimum active duty service period of 4 years has been established by the Secretary of the Navy.

In addition to the NROTC program, the U.S. Navy and U.S. Marine Corps have included Auburn University in the **Navy Enlisted Scientific Education Program.** This program offers enlisted members of these two services the opportunity of obtaining a baccalaureate degree in scientific fields. Upon graduation they are offered an appointment as ensign, U.S. Navy, or second lieutenant, U.S. Marine Corps. All books, tuition and fees are paid and the participants are retained on active duty with normal pay and allowances. This program was inaugurated in 1958. At the present time the required minimum active duty service after commissioning is four years.

Employment Service

The University Personnel Office assists students in obtaining employment to defray a portion of their educational expenses. The University, however, does not advise freshmen to attempt work during their first quarter on campus unless it is essential. Earnings vary with the job requirements and previous work experience. Since employers must know when a student is free for work, little assistance can be given any student until his class schedule is known.

The Personnel Office functions only as a referral agency and cannot promise jobs to students; however, every attempt is made to place capable students needing work.

Students are also assisted in locating full-time summer employment at resorts, national parks, camps, with governmental agencies and in business and industry. Information and applications for such employment should be secured early in Winter Quarter.

The University Personnel Office also assists student wives in locating employment both on and off the campus. Inquiries should be directed to the University Personnel Office, Temporary Building 10-A.

Cooperative Education Program

Students in certain curricula who qualify are offered an opportunity to participate in a plan of education known as the Cooperative Education Program. It offers the student a chance to add meaning and purpose to his theoretical classroom instruction by combining it with practical experience in a business or industrial job assignment which relates to his field of study.

The "co-op" student alternates between school and industry on a quarterly basis and while he is in school takes his courses as a regular student. The program requires five years at the end of which time he will have received almost two years of experience in addition to receiving his regular four-year degree.

Students in the following curricula may participate: aerospace, chemical, civil, electrical, and mechanical engineering; applied physics; physics; areonautical administration; industrial management; textile management and textile science; business administration; and mathematics. For further information, see page 110 and write to Director, Engineering Extension Service.

Educational Benefits For Veterans

Many current publications describe in complete detail the educational programs authorized by Congress under the following federal acts: Public Law 346 (G.I. Bill of Rights), Public Law 16 (Vocational Rehabilitation), Public Law 550 (Readjustment Assistance Act of 1952), Public Law 894 (Vocational Rehabilitation Revised), Public Law 634 (War Orphans Educational Assistance Act).

Auburn University is fully approved by the Veterans Administration to give training under these laws. Veterans planning to attend school under one of these laws should make application directly to the Veterans Administration and get prior approval before entering school.

Those entering school under the benefits of any one of the laws should have sufficient funds to finance themselves for one quarter or at least until payments begin coming in from the Veterans Administration (approximately two months).

For further information write to the Office of Student Financial Aid, Auburn University, Auburn, Alabama.

Student Services

The Dean of Student Affairs and the Dean of Women assist students with their problems and aid them in their adjustment to University life. Their offices serve as a general clearing house for matters pertaining to the welfare of all students.

The Dean of Student Affairs supervises all projects supported by the student activities fee and works mutually with students or groups on campus problems. The Dean's office is located in Samford Hall.

The Dean of Women's duties include matters pertaining to the welfare of all women students and approval of social functions that University women attend. The Dean's offices are located in the Social Center.

Counseling Service

The University endeavors to maintain counseling and guidance services for its students. Each academic dean, either personally or through appointed assistants, guides each student in his academic problems, especially in arranging schedules, maintaining residence requirements, and satisfying subject matter degree requirements. The Registrar and his assistants advise the student regarding hours and grade points required for graduation. In addition, counseling services of other types are available. The Dean of Student Affairs and the Dean of Women with their respective staffs, are especially concerned with any student problem, educational, vocational, or personal.

In addition to the counseling services offered throughout the University, a variety of services is provided for all students free of charge by the Student Counseling Service. Students seeking self-direction in vocational, educational, or personal areas are invited to call 887-6511, Extension 321, to make an appointment to see a counselor for individual, confidential assistance. The office is open from 8 a.m. to 12 noon and 1 to 5 p.m., Monday through Friday.

The staff of the Student Counseling Service perceive counseling as a process in which the student comes to the counselor voluntarily to gain in self-understanding so that he may solve his own problems as they arise now and in the future. The counselors do not perceive themselves as advisors, but as individuals who are concerned with helping students find solutions to their problems. The counselors respect the ability of the students to make their own choices after they have a better understanding of themselves.

PERSONAL COUNSELING

Many University students have personal concerns which may interfere with their academic or social success. Counselors attempt to offer an atmosphere in which students may discuss such problems freely and confidentially. Personal emotional adjustment, finances, health, dating, marriage, home relationships, social relations, adjustment to college work, and plans for the future are only a few of the many concerns. Often, effective solutions can be reached by a student through a counselor-counselee relationship.

VOCATIONAL COUNSELING

Counselors assist students in making a thorough self-appraisal of interests, abilities, aptitudes, and personality traits so that they may utilize this infor-

mation in making a wise vocational choice. Counselors interpret the data from tests, discuss all possibilities of success, and help the student work through the decision-making process. The Occupational Information Reading Room maintained in the Student Counseling Service is available to all students.

EDUCATIONAL COUNSELING

In addition to the academic departmental advisors of the University, the Student Counseling Service provides services to students who are having academic difficulties, who are indecisive about a major, or who wish information on their adaptability to selected programs of study. By gaining a realistic appraisal of themselves through counseling, students are better equipped to make more intelligent academic choices. This type of counseling is often interrelated with the other areas, and only by a complete understanding of all problems can a student's academic difficulties be alleviated.

Student Health Service

The Student Health Service of Auburn University renders the following services: (1) out-patient medical and surgical service by staff doctors only; (2) hospitalization at the University Infirmary; (3) local ambulance service; (4) medical supervision of the physical education and athletic programs; (5) health education; and (6) campus sanitation. These services are administered by the medical staff of the Health Service.

The University owns and operates a 65-bed infirmary equipped with a modern clinical laboratory and X-ray facilities. Working in conjunction with the State Health Department annual chest X-rays are given to students, faculty members and employees of the school. After physical evaluation of each student, recommendations are made to the student, to the dean of his respective school, to the physical education department, and to the military department.

Each entering student is required to file a physical examination report completed by his private physician before he can be admitted to Auburn University. Forms for this report will be furnished by the University.

No major surgery is performed in the Infirmary. Elective surgery should be performed in the student's home town, or by referral to a specialist during vacation periods or to a local surgeon. Emergency surgical operations are the responsibility of the student. Students who are in need of emergency operations and those having severe multiple or compound fractures will be referred for treatment and the expense will be a responsibility of the student. The University has available a surgical consultant who may be called when needed. The expense will be charged to the student requiring such consultation.

The Student Health Service is available to all regularly enrolled full-time students of the institution. Medical service is not provided by the University for the families of married students, but a list of local physicians will be made available by the Student Health Service upon request.

The Out-Patient Clinic is open from 8:00 a.m. to 11:30 a.m. and 1:00 p.m. to 4:00 p.m. each week day, Monday through Friday. Clinic hours are from 8:00 a.m. to 11:30 a.m. on Saturday, and 8:30 a.m. to 9:30 a.m. each Sunday. Emergency treatment is available 24 hours daily. Visiting hours at the Infirmary are from 10:00 a.m. to 11:30 a.m., 3:00 p.m. to 4:30 p.m.

and 7:00 p.m. to 8:00 p.m. each day. Only two visitors per patient are allowed simultaneously.

University physicians do not make calls outside the Infirmary or attempt to treat students in their rooms. Students who are too ill to come to the Infirmary will be furnished with local ambulance service. Parents will be notified by the University physician if a student is believed to be seriously ill.

Each student is entitled to 15 days free hospitalization at the University Infirmary during each school year. This includes professional services of the medical staff of the Student Health Service, general floor nursing care, ordinary medications, room and board, linen, routine laboratory and X-ray procedures.

The Student Health Fee does not include surgery, consultation, special X-rays, special medications, or special nurses. A charge is made for these, but only an amount sufficient to cover the cost.

The services of local physicians are available at the student's expense either at his place of residence or when he is properly admitted to the University Infirmary.

The Student Health Service is not available to students during the following vacation periods: Christmas holidays and the periods between the close of the Summer Quarter and the opening of the Fall Quarter.

During epidemics, the staff of the Student Health Service will make every possible effort to care for ill students at the Infirmary, but if Infirmary staff and facilities should be inadequate, the University will not assume responsibility for payment of services rendered by outside doctors or other hospitals.

Student Activities

The Student Body

The student body, composed of all Auburn students, has elected officers. It is divided into three branches, working cooperatively for the betterment of the students and Auburn, and students are encouraged to take part in the political life of the campus.

Student Government

The three-branch ruling organization for student government is elected each spring. Its purposes include controlling extra-curricular activities, providing members for joint student-faculty committees, and representing student opinion to the administration.

Student government is made up of the executive, legislative and judicial branches. The executive group is composed of the President, Vice President, Secretary, Treasurer, and members of the Executive Cabinet. Cabinet members are known as Superintendents and are appointed by the President and approved by the Senate. In addition, there may be advisory committees to the President.

The legislative branch, the Student Senate, is composed of members elected according to class. Students with opinions to present, refer their suggestions to the class senators, who will bring them before the Senate.

The Student Jurisprudence Committee has one presiding Justice and six student Associate Justices and is vested with the Judicial power of the Student Body. The committee interprets the Student Body constitution and renders decisions.

Women's Student Government Association

The purpose of the Women's Student Government Association is to uphold high standards of scholarship, and to create, promote and maintain a high sense of honor and integrity in all phases of University life.

Each Auburn co-ed is automatically a member and vital part of WSGA when she enters Auburn University. The WSGA is made up of four councils: the Executive, Legislative, Judiciary, and Dormitory House Councils. The Legislative Council is composed of representatives of each dormitory.

The WSGA plans and carries out a well-organized program for women students.

Student Publications

The Auburn Engineer – published monthly for and by students in Engineering.

The Auburn Forester – published annually by students of the department of Forestry.

The Auburn Veterinarian – booklet published quarterly for and by students in Veterinary Medicine.

The Glomerata – student annual publication; production costs covered by Student Activities Fee and advertising.

The Helm – a monthly paper published by NROTC students.

The Plainsman – a weekly paper published by students of the institution; production costs covered by Student Activities Fee and advertising.

The Tiger Cub – annual student handbook; production costs covered by Student Activities Fee and advertising.

The Auburn Union

The Auburn Union is the center of non-academic student and faculty life. The building, located in the heart of the campus, provides a living room for students away from home – a place to relax, to entertain friends, and to find convenient dining and school supply services. Planned programs of social, recreational and cultural events help develop students in the art of human relations.

Located in the Auburn Union are the War Eagle Cafeteria and Snack Bar, Alumni Offices, Faculty Club, Student Government Offices, Publications Offices, University Book Store, Union Ballroom, meeting rooms, commuters lounges, banquet rooms, reading and TV lounges, and Union staff offices.

The main desk has become the central information center on campus. On hand are the registration cards of each student enrolled, listing class schedule, home address, and campus address.

Religious Organizations

The student religious organizations of the churches of Auburn provide opportunity for worship, participation in religious programs, wholesome recreational and social activity and closer personal association with members of the faculty. These organizations are: Baptist Student Union; Disciples Student Fellowship (Christian Church); Church of Christ's Young People's Organization; the Canterbury Club of the Episcopal Church; Legion of Mary and the Newman Club of the Catholic Church; Gamma Delta, the International Association of Lutheran Students; Wesley Foundation of the Methodist Church; Westminster Fellowship of the Presbyterian Church; Hillel Counselship of the Jewish Faith; Liahona Fellowship of the Reorganized Church of Jesus Christ of Latter Day Saints; the Christian Science Organization; and Unitarian-Universalist Fellowship.

The Religious Life Committee, composed of students, faculty and staff of the University, serves as a functional organ for promoting and sponsoring all campus-wide religious activities in which operational coordination is needed to give the best benefits to the students of Auburn University.

Independent Organizations

TOWERS

Towers is a social and service organization for women students not affiliated with a social sorority. It was organized in 1958 and its aims are: to maintain close sorority and independent relationship at Auburn; to encourage leadership and scholarship among members and affiliates; to provide an outlet

for non-affiliated women students; to promote University projects that benefit the entire student body.

Musical Organizations

The bands are maintained by the University for regularly enrolled students who wish to develop their music ability and to participate in many University and off-campus activities. **The Marching Band,** which accompanies the football team on its trips to games in many areas, and which represents the University for various University, state, and out of state functions, normally consists of approximately 125 players, who receive special training in drill formations. Physical Education may be waived for students during the fall quarters in which they are members of the Marching Band. (See Band Director for details.) **The Concert Band** consists of advanced students who have passed the work of the preliminary bands, and students who are preparing to teach band in the schools. It provides music for various University activities and some off-campus functions such as concert tours. Regular training which embodies instruction in the rudiments of music and the use of band instruments is given free of charge at the band practice periods. These activities may be taken with or without degree credit.

The **Orchestra** is sponsored by the Music Department for the development of musical talent and individual achievement in ensemble playing. Students in the early stages of musical training, especially those in violin, viola and cello, are invited to participate. Membership is by permission of the director. This activity may be taken with or without degree credit.

The **Men's Glee Club,** the **Women's Glee Club,** and the **Mixed Chorus** are large study and performing choruses open to any student. Regular rehearsals and participation in campus and off-campus activities are a part of these courses. Admission to the **Concert Choir** is obtained by audition; a high degree of proficiency in choral singing and a systematic study of serious choral literature is expected of the men and women who are chosen for this group. These activities may be taken with or without degree credit. Qualified students are selected to sing in the **Men's Octet** and the **Women's Octet.** The **Octets** are often called upon to furnish light, entertaining music for events at Auburn and throughout the state.

The Auburn Opera Workshop has for its purpose the training of students in the various phases of operatic production largely through actual stage performances of outstanding operas. Membership is open with or without degree credit to all students. Each year the group produces several operas sung in English and presents a well-known musical in cooperation with the various committees of the Auburn Union Building. Students are assigned duties as singers, stage technicians, musical assistants, etc., according to their respective interests and talents.

Lecture And Concert Series

The University, through the Lecture and Concert Committee composed of faculty and student members, brings to the campus each year a wide variety of lectures, concerts and other programs of cultural value. This project is financed through the student activities fee, and all students are

admitted to events without charge upon presentation of their student identification cards.

Intramural Sports

The Intramural Sports Department offers to students, both men and women, many opportunities to participate in competitive team and individual sports, and recreational activities. Healthful sports, good sportsmanship, and friendly competition are stressed. All students are urged to participate in the program which is entirely voluntary and largely student-supported and supervised.

Regular tournaments are offered in seasonal team and individual sports.

Fall Quarter. – Touch football, swimming, volleyball.

Winter Quarter. – Basketball, bowling, table tennis.

Spring Quarter. – Badminton, golf, softball, tennis, track.

Summer Quarter. – Softball, tennis, golf, swimming.

Intramural Sports for Men also operates a **check-out service** in the basement of the Auburn Union Building. Any student may check out athletic equipment either on a 24-hour basis or over weekends.

National Honor Societies

The following members of the Association of College Honor Societies have established chapters at Auburn:

Alpha Epsilon Delta (Pre-Medicine)
Alpha Lambda Delta (Freshman Scholastic – Women)
Chi Epsilon (Civil Engineering)
Eta Kappa Nu (Electrical Engineering)
Mortar Board (Student Leadership – Senior Women)
Omicron Delta Kappa (Student Leadership – Junior and Senior Men)
Phi Eta Sigma (Scholarship – Freshman Men)
Phi Kappa Phi (Scholarship – Senior Men and Women)
Pi Tau Sigma (Mechanical, Aerospace Engineering)
Rho Chi (Pharmacy)
Sigma Pi Sigma (Physics)
Tau Beta Pi (Engineering)
Tau Kappa Alpha (Forensics)

National Recognition Societies

The following national societies have chapters established at Auburn:

Alpha Phi Omega (Campus Service – Men)
Arnold Air Society (Air Force ROTC)
Angel Flight (AFROTC Coed Auxiliary)
Cwens (Student Leadership – Sophomore Women)
Gamma Sigma Delta (Agriculture)
Kappa Delta Pi (Education)
Omicron Delta Gamma (Economics)
Omicron Nu (Home Economics)
Pershing Rifles (Air Force ROTC Basic Cadets)
Phi Lambda Upsilon (Chemistry)
Phi Mu Epsilon (Mathematics)
Psi Chi (Psychology)
Scabbard and Blade (Military)
Xi Sigma Pi (Forestry)

Campus Leadership And Service Organizations

"A" Club – Varsity lettermen in baseball, basketball, football, track or cheerleading

Auburn Veterans Association – Service Organization open to veterans of the Armed Services.

Circle "K" Club – International Service Club for college men sponsored by Kiwanis International.

Spades – Honor Society of ten most outstanding senior men.

Squires – Honor Society for most outstanding sophomore men.

Towers – Independent Women's Service and Social Organization.

Departmental And Professional Organizations

Agricultural Council
Agricultural Economics Club
Agronomy Club
Alpha Beta Alpha (4-H Members)
Alpha Zeta (National Agriculture Fraternity)
American Chemical Society
American Institute of Aeronautical Space
American Institute of Architects
American Institute of Chemical Engineers
American Institute of Electrical Engineers
American Pharmaceutical Association
American Rocket Society
American Society of Agricultural Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
Art Guild (Visual Arts and Industrial Design)
Auburn Camera Club
Auburn Debate Council
*Auburn Engineers Council
*Auburn Historical Society
Auburn Players (Dramatics Club)
*Auburn Soccer Club
Auburn Speleological Society
Auburn Student Education Association
Auburn Tiger Sharks (Skindiving)
*Auburn University Young Republican Club
*Association for Childhood Education
Block and Bridle Club (Animal Science)
Builders Guild (Building Construction)
Caissons Club (ROTC Artillery, Advanced Cadets)
Dairy Science Club
Dana King Gatchell Home Economics Club
Delta Omicron (Music, Women)
Delta Sigma Pi (Business Administration)
Dolphin Club (Women Swimmers)
Forestry Club
Future Farmers of America
Horticulture Forum
*Industrial Arts Club
Industrial Design Forum
Institute of Radio Engineers
International Relations Club
Junior American Veterinary Medical Association
Kappa Epsilon (Pharmacy, Women)
Lambda Tau (Medical Technology)
Omicron Kappa Pi (Decor Club)
*Pre-Law Club
Phi Beta Lambda (Business Education)
Phi Delta Chi (Pharmacy)
Phi Delta Kappa (Education, Men)
Phi Mu Alpha – Sinfanid (Music)
Phi Psi (Textiles)
Phi Zeta (Veterinary Medicine)

* Organizations marked by an asterisk are serving a probationary period prior to official University recognition.

Pi Sigma Epsilon (Salesmanship, Marketing)
Pi Tau Pi Sigma (ROTC Signal Corps Advanced Cadets)
Physical Education Club
Poultry Club
Pre-Veterinary Medical Association
°Psychology Club
Scarab (Architecture)
Society for Advancement of Management
Society of American Military Engineers
Spiked Shoe (Varsity Lettermen in Track)
Sigma Tau Delta (English)
Sociology Club
Steerage (Naval ROTC)
°Semper Fidelis Society (Naval ROTC for Marine Cadets)
Track and Saber (ROTC Army Advanced Cadets)
Women's Recreation Association

Student Wives Clubs

Army Cadet Wives Club
Auburn T-Square Widows (Architecture)
Auxiliary of Civil Engineers
Dames Club
Forestry Wives Club
Junior AVMA Auxiliary
Keystones (Building Construction)
Pharmacy Wives Club
Wives of Auburn Engineers
Wives of Industrial Management Students

Social Fraternities And Sororities

The following national social fraternities have established chapters at Auburn:

Alpha Gamma Rho
Alpha Psi
Alpha Tau Omega
Delta Chi
Delta Sigma Phi
Delta Tau Delta
Delta Upsilon
Kappa Alpha Order
Kappa Sigma
Lambda Chi Alpha
Omega Tau Sigma
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Tau
Pi Kappa Alpha
Pi Kappa Phi
Sigma Alpha Epsilon
Sigma Chi
Sigma Nu
Sigma Phi Epsilon
Sigma Pi
Tau Kappa Epsilon
Theta Chi
Theta Xi

The following national social fraternity has established a colony at Auburn: Beta Theta Pi (Beta Pi Colony).

The Interfraternity Council regulates the relationships between the member fraternities.

The following national social sororities maintain chapters at Auburn:

Alpha Delta Pi
Alpha Gamma Delta
Alpha Omicron Pi
Chi Omega
Delta Delta Delta
Delta Zeta
Kappa Alpha Theta
Kappa Delta
Phi Mu
Pi Beta Phi
Zeta Tau Alpha

The following national social sorority has established a colony at Auburn: Kappa Kappa Gamma.

The Pan-Hellenic Council regulates the relationships of the sororities.

University Regulations

Academic Regulations

The student pursuing a degree program must fulfill a number of requirements specified by Auburn University. These concern such things as the number of courses he will take and the pattern they should follow. It will also concern his grades, conduct, and the amount of time he must spend in full-time work. Explanations of these requirements are presented in the following paragraphs.

Enrollment And Class Attendance

CLASS ATTENDANCE

Students are expected to attend punctually every recitation, laboratory exercise, and other University duties.

LEAVE OF ABSENCE

A student whose work is satisfactory – as reported by his instructors – may be granted a leave of absence to represent the University in the following activities: athletics, band, orchestra, glee club, debating or oratorical contests, dramatics club, thesis work, inspection trips, and such other University activities as the President or Council of Deans may approve.

REGISTRATION

The orientation of new freshmen and registration of new and previously enrolled students will be held each quarter as indicated in the University Calendar. A service charge will be made for registration after the official dates listed in the University Calendar. (See section on Fees and Charges, page 29.)

Every student is required to be registered in Auburn University in his quarter of graduation or in any other quarter when, in clearing an "incomplete" grade, working on a graduate thesis, or engaged in any other endeavor relating to his normal progress as a student, he makes use of the instructional staff and the facilities of the University. For such special registration, a fee of $5.00 is charged. Registration in a correspondence course satisfies this requirement.

LATE ENROLLMENT

After the date specified in the University Calendar as the last day for new registrations, no student may register except by permission of his dean. The load of a student who registers late shall be reduced at the discretion of his dean.

CHANGE IN PROGRAM OF STUDIES

A student is required to have approval of his dean before changing his program of studies. A fee of $1.00 will be charged for each change in schedule and $5.00 for change in curriculum after classwork begins, except schedule changes made necessary by failure at the final examination period, or as a result of special examinations, or in special cases approved by the Registrar.

A grade of "Withdrawn" (W) will be assigned when the student drops a course with the permission of the dean within the first two weeks of a quarter, or when he is permitted for special reasons to drop the course without penalty after this period.

A grade of "Withdrawn Failing" (WF) will be recorded in the Registrar's Office for a subject dropped on request of the student after the second week of a quarter. Exceptions are made only as authorized by the dean.

A student's dean may make such substitutions as he deems necessary in the student's course of study. The student's load may also be reduced by the dean when circumstances seem to make it advisable.

BACK WORK

In arranging a student's work for each year the dean will require him to schedule first the back work of the lower class or classes, but where this would work a serious hardship on the student the dean may make such exceptions as he deems necessary.

CLASSIFICATION

A student will be promoted from one class to the next when he lacks not more than 10 hours of course work specifically required in his curriculum.

A student who has been awarded one baccalaureate degree and pursues another course for a second baccalaureate degree will be classified as an undergraduate student.

Students who for reasons acceptable to the dean do not wish to pursue regular courses either as to load or curriculum, will be admitted as unclassified students.

CURRICULUM TRANSFER

If a student transfers from one curriculum to another requiring fewer hours, a year of credit in the former will not carry more than a year of credit in the latter.

If a student transfers from one curriculum to another requiring more hours, the graduation requirements of the new curriculum must be met as far as hours and subject matter are concerned.

For students transferring from other institutions, credit will be allowed for ROTC and Physical Education satisfactorily completed, on the same basis as if the work were taken at Auburn.

A student who is excused for any reason from any subject will be required to substitute other approved work.

AUDITING PRIVILEGE

A persons who is not matriculated in the University may audit lecture courses or the lecture part of a combined lecture and laboratory course with the approval of the dean and instructor of the subject. The auditing privilege is not regularly permitted in laboratory or combined lecture and laboratory courses; however, in exceptional cases, with the approval of the dean and instructor concerned, persons not matriculated in college may audit such courses upon payment of the auditing and laboratory fees. Auditors register

with the dean and Registrar and are listed on the class roll but do not participate in classroom discussions, take tests or final examinations, or make reports and may receive no grades or credits. A fee of $5.00 will be charged for auditing a lecture course. Regularly enrolled students carrying 10 hours or more and members of the faculty may audit lecture courses upon approval of the dean and the instructor concerned without payment of the auditing fee. Graduate students may audit only one course per quarter.

STUDENT LOAD

The normal quarterly load for a student for any year shall be the maximum number of credit hours prescribed in the curriculum for any quarter of that year.

Any freshman or sophomore student, who for any reason is excused from ROTC and Physical Education, when the normal load is 17 hours, may be permitted to take a load of 18 hours inasmuch as no two-hour elective courses are available.

If approved or recommended by the dean, less than the normal load may be taken.

A student who carries not less than 15 credit hours in a quarter and passes all work carried in that quarter with a grade point quotient of 1.5 or more may schedule an overload not to exceed a total load of 23 quarter credit hours during the next quarter of residence at Auburn University, provided the overload is approved by the student's dean. The overload privilege will not be lost by the student who schedules fewer than 15 credit hours in an intervening quarter or quarters provided he passes all work carried with a minimum grade point quotient of 1.5 in each of the intervening quarters.

In the Summer Quarter, students taking courses on the term basis not eligible for the overload will be restricted to the prescribed quarterly load but may take, in one term: (1) one five-hour term course plus 10 hours of regular quarter courses; or (2) two five-hour term subjects.

A student registering for work in excess of the permitted load will be required to drop the overload during the official Change-in-Registration Period at the beginning of the quarter. If by oversight an overload is carried, the requirements for graduation will be increased by the number of credit hours carried in excess of the permitted load.

RESIGNATION

After the scheduled date for reporting of mid-quarter deficiencies no student may resign from school and escape the penalty of failure. After this date the dean shall contact the student's instructors to determine his scholastic standing at the time of resignation and report such standing to the Registrar, and if failing in over half his work, will be charged with one quarter of residence and the number of hours reported as failing.

When a student through illness or physical disability is forced to resign after the mid-quarter and when this condition has been the main factor in causing scholastic deficiencies, discretionary power in determining whether a scholastic penalty is to be assigned shall not rest with the student's dean but with the Council of Deans. See "Rules and Regulations for Students" in The Tiger Cub for detailed regulations.

Examinations And Grades

GRADING SYSTEM

Final grades are assigned as follows: A, Superior; B, Good; C, Acceptable; D, Passing; F, Failure. Grade points are assigned as follows: A – 3; B – 2; C – 1; D – 0; F – 0. For graduate students see under Graduate School.

A grade of "Incomplete" (IN) is assigned when the quality of work has been of passing grade, but the student has been prevented by illness or other justifiable cause from completing the work required prior to the final examination. If the student is both "Incomplete" in his work and absent from the final examination, the grade of "Absent Examination" (X) shall be assigned. When a grade of "Absent Examination" (X) is reported, the instructor shall indicate whether or not the quality of work has been of passing grade. If passing, a grade of "X" is assigned; if not passing, the grade shall be "XF." Grades of "Incomplete" and "Absent Examination" in required subjects not cleared within one resident quarter shall be repeated. Graduate students shall remove incomplete grades within a reasonable time and will not be allowed to graduate with grades of "Incomplete" on their records. A student absent from a final examination for any reason other than personal illness must obtain an excuse from the Council of Deans in order to take the examination.

A grade of "Withdrawn" (W) will be assigned when the student drops a course with the permission of the dean within the first two weeks of a quarter, or when he is permitted for special reasons to drop the course without penalty after this period. A grade of "Withdrawn Failing" (WF) is assigned to a course dropped with penalty.

If a student is dropped for excessive absences, a grade of "FA" is assigned.

ANNOUNCED QUIZZES

At least two announced one-hour quizzes shall be held in each subject during the quarter, one in the first half of the quarter and the other in the last half. Other quizzes may be given as deemed necessary by the instructor and department head.

EXAMINATIONS AND REPORTS

Examinations are classified as (1) final examinations at the end of each quarter and (2) special examinations. Grades in all subjects are reported to the students' parents or guardians at the end of each quarter. Fees for special examinations are as follows: If taken at a regularly scheduled period, $2.00; out of schedule, $5.00. A student absent from an examination for any reason other than personal illness must obtain an excuse from the Council of Deans in order to take the examination. Examinations missed because of illness must be excused by the University Physician.

For detailed regulations governing special examinations, see "Rules and Regulations for Students" in The Tiger Cub.

MID-QUARTER DEFICIENCIES

Deficiencies are reported at the end of the fifth week in each quarter.

DEAN'S LIST

A full-time student (minimum of 15 quarter hours) passing all credit hours of work carried during a quarter and attaining a scholastic record within the upper five per cent of the records attained by the full-time students enrolled in his school may be designated an honor student for that quarter. The honor attained will be recorded on the Dean's List and on the student's permanent record.

Academic Probation

A student will be suspended for a period of 12 months at the end of any quarter during which he does not earn at least five credit hours. Moreover, a student will be suspended for a period of 12 months if he fails to meet the minimum percentage credit hour and grade point requirements as determined once each year; at the end of each Spring Quarter a student must have earned from all work attempted at Auburn, **credit hours and grade points** equal at least to the following percentage schedules:

From 1 through 4 quarters of college residence at Auburn and elsewhere: 60%.

From 5 through 7 quarters of college residence at Auburn and elsewhere: 70%.

Beyond 7 quarters of college residence at Auburn and elsewhere: 80%.

A suspended student may reestablish eligibility to return in any succeeding quarter by attending Auburn the Summer Quarter immediately following the date of suspension and making a 1.0 (C) average on a quarterly load of not less than 15 quarter credits acceptable in his curriculum. A suspended student attempting but failing during a Summer Quarter to reestablish eligibility to continue cannot return before the expiration of his twelve-month suspension period. The effective beginning date of a student's twelve-month suspension period is the end of his last quarter in residence. A suspended student cannot reestablish eligibility or make progress toward an Auburn degree by earning credits elsewhere or via correspondence during his period of suspension.

Any work done at another institution by a student while on dropped status shall have no effect on his eligibility for continuation in residence, but a transcript of such work must be filed with the Registrar.

In determining a student's eligibility for continuation in residence, hours passed and grade points earned will be computed on the basis of credit courses carried, except that a student who passes a remedial course will not be dropped for failure to pass five hours.

Credit hours attempted, credit hours passed, and grade points earned in a Summer or other make-up quarter by a suspended student will be included in determining the eligibility for continuation in residence at the end of the first Spring Quarter after the student re-enters Auburn University. (This does not supersede the minimum five-hour regulation.)

Credit hours and grade points earned by correspondence or extension will not be included in calculations for continuation in residence.

It is the student's responsibility to know his continuation in residence status at all times. **If in doubt about his standing, he should consult his dean.**

When a regular student's load, by voluntary withdrawal from courses or because of excessive absences, has been reduced to less than 10 quarter hours, at the discretion of the dean he may be recommended for suspension for the remainder of the quarter or for the succeeding quarter.

The Council of Deans reserves the right to drop from the rolls any student at any time for flagrant or continuous neglect of his work or failure to make satisfactory grades.

Students enrolled in the **School of Veterinary Medicine** who make a scholastic average less than 1.25 for any two quarters of one academic year may be dropped from the School of Veterinary Medicine for scholastic deficiency. A student who makes a grade of "F" on any course may be required to withdraw from the School of Veterinary Medicine until the beginning of the quarter in which that course is given during the next academic year, and he may be required to repeat certain other courses in the curriculum for that quarter.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the general scholastic requirements for continuance in college. The scholastic penalties incurred while enrolled in the School of Veterinary Medicine will become a part of the student's record.

ENGLISH REQUIREMENTS

All students are expected to maintain a reasonable standard of good usage of English, oral and written. Instructors are directed to insist on correct and accurate speaking and writing in all class work.

Freshmen who show on the placement tests at entrance lack of adequate preparation for Freshman English must take special preparatory work before being admitted to English 101. No substitution for the Freshman English requirement is permitted.

Credit in Freshman English Composition earned in another institution may be allowed on transfer, as follows, except that no grade less than "C" will be accepted:

1. If the transferee has less than four and one-half quarter hours credit in Freshman English Composition, no credit is allowed.
2. When the transferee has earned four and one-half quarter hours but less than nine, credit may be allowed for one five-hour course at Auburn, but any hours in excess of five shall not be counted toward graduation.
3. When the transferee has earned nine or more hours and has met the first year English Composition requirement of the other institution, credit may be allowed for both EH 101 and EH 102, provided the minimum of nine hours involves no duplication. A total of 12 hours may be accepted toward the graduation requirement when the 12 hours represent a continuous course sequence at one school. Students entering an undergraduate school at Auburn University after receiving a Bachelor's degree from another accredited college or university are excused from meeting these regulations.
4. No student failing a Freshman English Composition course at Auburn will be permitted to transfer credit from another school to offset that "F", but must repeat the course in residence at Auburn.

PHYSICAL EDUCATION

Six quarters of physical education are required of all undergraduate students under 26 years of age who are regularly registered. Unless otherwise approved by the student's dean, each student who lacks physical education credits must register for physical education in his first and succeeding quarters of residence until all physical education requirements have been met. One quarter hour of credit shall be granted for each quarter. Students who transfer from an institution not requiring physical education will have their physical education requirement reduced by the number of full-time quarters in residence at the former institution. Students who transfer from an institution requiring physical education will have their physical education requirement reduced by the number of quarters completed at the former institution. Students who have not fulfilled the requirement in physical education at the previous institution, will be required to do so at Auburn University before graduation.

In addition to physical education instruction, it is an aim of the Department of Health, Physical Education and Recreation to provide opportunities for all students of the University to participate in some form of physical recreational activity. In this University, opportunities are offered through the intercollegiate athletics, intramural sports, and required physical education programs. Athletic facilities are: a stadium with a cinder track and football field, two additional athletic fields, baseball field, Alumni Gymnasium which contains basketball floor and swimming pool, field house, sports arena, and a series of tennis courts. See page 52 for physical education credit allowed for military service; also see "Rules and Regulations for Students" in the Tiger Cub for detailed regulations governing physical education requirements.

RESERVE OFFICERS TRAINING CORPS (ROTC)

Three Military Services – Army, Navy, and Air Force – are represented by ROTC Units at Auburn. Entering freshmen may enroll in the ROTC of their choice at registration, subject to class capacities, except that enrollment in Naval ROTC is by competitive examination prior to registration.

Eligibility for enrollment in the Advanced Course of any ROTC will be subject to departmental policies, criteria, and quota limitations.

MILITARY TRAINING (BASIC ROTC)

Successful completion of the Basic Course (Army, Navy, or Air Force ROTC) is a prerequisite for graduation of all male students except as noted below:

a. Students physically disqualified for military service under standards prescribed by the Departments of Army, Navy, and Air Force, and as determined by the University Physician.

b. Veterans with 90 days or more honorable active military service in the U.S. Armed Forces eligible to attend under G.I. Bill of Rights or the Korean War Bill. See also paragraph (4) on page 51.

c. Students more than 23 years of age prior to enrolling at Auburn for the first time are excused from Basic military training.

d. **Transfer students** from institutions not requiring military training will have the basic military requirement reduced by the number of full-time quar-

ters completed in residence at the former institution provided that military training will not be required if the student has completed five full quarters. A student who transfers from an institution requiring military training will have his basic military requirement reduced by the number of quarters of military training completed at the former institution. A transfer student contemplating advanced ROTC should consult with the head of the service in which he is interested.

e. Students with outstanding records in ROTC training at regularly established Junior ROTC Units, may be excused from the first year Basic Course providing the student applies for excuse and possesses a Certificate of Eligibility from the PMS of the Junior ROTC Unit. In no case will a student in this category be excused from more than the first year Basic Course. If so excused, enrollment in the second year Basic Course will be made at the beginning of the Sophomore year.

f. Students who are not citizens of the United States.

Students enrolling in college for the first time and transfer students not otherwise excused are required to register for and attend scheduled military classes (Basic Course ROTC) in the first and succeeding quarters of residence until military training requirements have been met.

SELECTIVE SERVICE DEFERMENTS

For regulations concerning Selective Service deferment based on enrollment in ROTC programs, see description carried in this catalog under the particular division: Air Science; Military Science; Naval Science.

Military Service And Off-Campus Credit

MILITARY SERVICE CREDIT

Applicants who have served in the Armed Forces, upon submitting records to the Registrar on the official separation form, may be allowed credit toward advanced standing for service experience as follows:

(1) Courses completed in military service programs at the college level insofar as they fit into the student's curriculum as required subjects or as electives, as approved by the dean concerned.

(2) Officer candidate and special service training not strictly organized as college courses, and other formal or informal off-duty training. Credit may be allowed toward advanced standing by the dean after review by the Registrar and the dean concerned of the official separation record and, as required, after passing with satisfactory scores or grades any field or subject examinations given through the Armed Forces Institute or by the department concerned. Credit for college level General Educational Development Tests is allowed as approved by the dean concerned, except that no credit is allowed in English.

(3) Correspondence courses. Credit may be allowed for college level courses completed by correspondence through the Armed Forces Institute, institutions approved by the Armed Forces Institute, and other accredited institutions as approved by the dean concerned.

(4) Veterans eligible to attend under the G.I. Bill of Rights or the Korean War Bill will be excused from Basic ROTC training and will be allowed college credit as follows:

Commissioned Officers – 24 Quarter Hours

Others – 6 Quarter Hours

Students who have completed a six-month Reserve Training Program (ACDUTRA) resulting in an honorable separation will be given college credit for three quarters (usually the first year) of the ROTC Basic Course. Other students who have completed terms of military service resulting in an honorable separation, will be given college credit as follows:

For 6 to 12 months – Three quarters of the ROTC Basic Course (three quarter hours) usually taken in the first year.

12 months or more – The entire Basic ROTC Course (6 quarter hours).

Any such student who desires to enroll in the Advanced Course offered by the Departments of Air, Military, or Naval Science shall complete as much of the Basic ROTC Course as may be prescribed as prerequisite by the department concerned.

(5) The Basic ROTC requirement will be waived for successful completion of the training required to become a federally recognized officer in the National Guard of any state. A total of six quarter hours of credit will be allowed, including any Basic ROTC credit earned in residence.

(6) Students who have had active military service may receive credit in physical education as follows: for less than six months, no credit; for six months to one year, one quarter hour in Functional Physical Education, PE 100; for more than one year, six quarter hours.

EXTENSION AND CORRESPONDENCE COURSES

The following regulations govern extension and correspondence courses: (1) Credit for undergraduate courses in extension and/or correspondence in the major subject or for requirements for the baccalaureate degree shall not exceed, including transfer credits so earned, 10 per cent of the total credit required. (2) Credit hours earned by correspondence or extension will be counted as any other credit hours earned toward meeting the requirements for graduation, but will not be included in the calculation for continuation-in-residence. Grade points will be assigned to such work toward meeting the requirements for graduation, but in no case will the number of grade points exceed the number of credit hours so earned. (3) Credit for extension and correspondence courses to be taken at Auburn or elsewhere must be approved in advance by the student's dean. (4) No student in residence may enroll for a correspondence course if he can schedule the course or a suitable substitute. (5) No student shall receive credit for correspondence work which, with courses taken in residence, makes a total load exceeding the maximum allowed under college regulations.

In addition to the above, students taking work under the Auburn University Correspondence Study Program are subject also to its regulations as outlined on page 44. For further information, course listing, and application form request a Correspondence Study Bulletin from Director Robert L. Saunders, Correspondence Study Program, School of Education, Auburn University.

CREDIT FOR WORK DONE IN OFF-CAMPUS CENTERS

Permission to take work at a university off-campus center is at the discretion of the dean and within the established relationships between the center and the comparable school or college in the parent university of the center.

It shall be the responsibility of the student to secure and file with his dean a statement from the center that he may use credit in the desired course toward meeting requirements for the appropriate degree assuming his enrollment at the parent university under comparable classification and circumstances.

Degree Requirements

To qualify for graduation, a student must complete the courses and hours specifically required and accepted for his curriculum with a grade point average of 1.0 (C). A student who transfers from another institution must earn grade points equal in number to the additional hours required for completion of the curriculum. A student transferring from one curriculum to another requiring fewer hours will have his graduation requirements in the new curriculum increased in proportion to the number of quarters completed in the prior curriculum. If courses by correspondence and extension are accepted, the number of grade points allowed will not exceed the number of credit hours so completed.

Not more than 10 quarter hours of the final year's work may be obtained through extension or correspondence courses, or both, unless the student has completed a full load in residence previously for one full session of 36 weeks, in which case credit will be allowed for a total of 18 quarter hours in either extension or correspondence, or a combination of the two. All credit hours earned by correspondence or extension will be counted as any other credit hours earned toward meeting graduation requirements but will not be included in the calculation for continuation in residence.

Degrees are conferred at Commencement Exercises held at the close of each quarter. A degree will not be conferred in absentia without official permission of the student's dean.

The graduation fee of $10.00 must be paid at the beginning of the quarter of graduation.

No student will be issued a diploma or statement of credits if he is in default on any payment due the University or any school or division thereof.

To obtain a bachelor's degree a student must complete the final year of work at Auburn University. This regulation may be waived, at the discretion of the dean, for men who entered military service from Auburn University and completed work while on active duty.

A minimum of 45 quarter hours and 45 grade points and 36 weeks of residence is required for a second baccalaureate degree by a graduate of Auburn University. The minimum requirements for a second baccalaureate degree for a graduate of another institution are completion of the hours required in the final year of the curriculum with an equal number of grade points and 36 weeks of residence at this institution. A student must be enrolled in a curriculum at least nine months immediately prior to graduation. A minimum of 45 quarter hours and 36 weeks of residence is required for a master's degree.

THESIS

A thesis on a subject related to the course of study may be required of each applicant for a bachelor's degree. In lieu of a thesis, a candidate may be permitted to report on special laboratory or research work in approved subjects. For graduate thesis see under "Graduate School."

GRADUATION HONORS

Students completing graduation requirements with exceptionally high scholastic records who have completed at least nine quarters of work in residence at Auburn University are graduated with distinction. The distinction attained will be recorded on the student's diploma and placed on his permanent record.

A transfer student who has completed at least nine quarters of work in residence at Auburn University is eligible for graduation honors if he meets both of the following requirements: (1) his grade point quotient on all work taken in residence at Auburn University meets the minimum requirements for the honor and (2) his over-all grade point quotient on all work taken in residence at Auburn University and elsewhere meets the minimum requirements for the honor.

A transfer student may not be graduated with a degree of distinction higher than that for which he would be eligible on the basis of his Auburn University record, and where his over-all average is lower than his Auburn University record, the degree of distinction earned will be determined by his over-all grade point quotient.

A student whose record at Auburn University fails to meet the requirements established for one of the degrees of distinction may not be graduated with honors regardless of his record elsewhere.

In determining graduation honors, all work attempted in residence except remedial subjects will be used in the calculations. Where transfer credits are considered, calculations will be based on the grade point values in use at Auburn University.

The grades of distinction and requirements are: With Honor, a grade point quotient of at least 2.4; With High Honor, a grade point quotient of at least 2.6; and With Highest Honor, a grade point quotient of at least 2.8.

Special Regulations

For complete information regarding all Special Regulations, see "Rules and Regulations for Students" in the Tiger Cub, the student handbook.

Discipline

1. Government is administered by the President and the Council of Deans. Each student, by act of registration, obligates himself to obey all rules and regulations.

2. Students are expected to conduct themselves along the lines of good citizenship by obeying the laws of the United States, the State of Alabama, the City of Auburn, and the University. Enrollment as a student in no way exempts any person from penalty in case of violation of local, state, or national laws.

3. Students are not permitted to participate in public entertainments or contests without previously obtaining permission of University authorities.

4. All publications supported by the Student Activities Fee are subject to supervision by the Board of Student Publications.

Automobile Registration

Registration of four-wheel motor vehicles will be a part of the academic registration procedure at the beginning of the Fall Quarter each year for all undergraduate and graduate students and will be part of the registration procedure at the beginning of the Winter, Spring and Summer Quarters for all students not already registered. Students who bring unregistered cars on the campus after any registration period must register them at the University Security Office, Department of Buildings and Grounds, immediately after arrival on the campus. Faculty and Staff members shall register their four-wheel vehicles at the University Security Office. Failure to register a four-wheel vehicle, to use the proper decal and to park in the proper zone will constitute a violation and subject the violator to certain penalties.

Freshmen will not be permitted to park or operate a vehicle on the main campus during normal school hours. Freshmen should not bring cars to Auburn unless required for commuting. For specific information regarding designated parking areas, traffic regulations and controls, violations and penalties, secure a copy of the "Parking and Traffic Regulations" from the University Security Office.

School of Agriculture

E. V. Smith, *Dean*
Charles F. Simmons, *Associate Dean*
Coyt T. Wilson, *Assistant Dean*

THE SCHOOL OF AGRICULTURE offers courses designed to prepare both men and women for careers in the field of agriculture and related professions. The courses are so arranged as to provide a broad foundation in the basic sciences, a general knowledge of the applied sciences, and a reasonable number of cultural subjects. Most of the basic science courses are given in the freshman and sophomore years and serve as a basis for a better understanding of the applied or more practical subjects which are usually taken in the junior and senior years.

A curriculum is offered in Agricultural Science with majors in Agronomy and Soils, Animal Science, Dairy Production, Dairy Manufacturing, Poultry Science, Horticulture, and Agricultural Journalism. Other curricula are offered in Agricultural Administration, Agricultural Engineering, Biological Sciences, Forest Management, Ornamental Horticulture, and Wood Technology. Within these curricula majors are permitted in line with the student's special interest. If a student is permitted to major in a field where the courses are not prescribed in the catalog he should consult with the head of the department concerned.

The School of Agriculture also furnishes the subject matter training in Agriculture for the curriculum in Agricultural Education.

Credit will not be allowed for agricultural subjects taken at non-land-grant colleges unless the student passes validating examinations in such subjects after entering Auburn. Arrangements for these examinations must be made with the Dean of Agriculture in the first quarter of the student's enrollment in the School of Agriculture at Auburn and the examinations must be completed before the middle of the second quarter.

Curriculum in Agricultural Science (AG)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 103	Gen. Chemistry 4	EH 101	English Comp. 5	EH 102	English Comp. 5
CH 103L	Gen. Chem. Lab. ..1	CH 104	Gen. Chemistry 4	MH 112	Intr. College Math. 5
HY 107	United States History 5	CH 104L	Gen. Chem. Lab. ..1	ZY 102	Gen. Zoology 5
MH 111	Intr. College Math. 5	ZY 101	Gen. Zoology 5	MS	Military Training 1
AS 101	Agr. Orientation 0	MS	Military Training 1	PE	Physical Education ..1
MS	Military Training 1	PE	Physical Education ..1		
PE	Physical Education ..1				

SOPHOMORE YEAR

AH 200	Intr. An. Husb. 5	AS 202	Agr. Economics 5	AH 204	Animal Biochemistry and Nutrition 5
BY 101	General Botany 5	BY 102	General Botany 5	AY 201	Grain Crops 5
PS 204	Physics 5	CH 105	Gen. Chemistry 3	HF 201	Orchard Mgt. 5
MS	Military Training 1	CH 105L	Gen. Chem. Lab. ..2	MS	Military Training 1
PE	Physical Education ..1	MS	Military Training 1	PE	Physical Education ..1
		PE	Physical Education ..1		

JUNIOR YEAR

AN 301	Drainage & Ter. 5	AY 304	General Soils 5	AN 303	Farm Machinery and Equipment 5
PH 301	General Poultry 5	BY 306	Plant Physiology 5	BY 309	Plant Pathology 5
SP 305	Public Speaking 3	DH 200	Fund. of Dairying ..5	HF 308	Vegetable Gard. 5
JM 315	Agr. Journalism 3		Elective 3		Elective 3
	Elective 3				

SENIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AY 404 Cotton Production ..5	AS 301 Agr. Marketing 5	AH 401 Swine Production 5
FY 313 Farm Forestry 5	AY 401 Forage Crops 5	AS 401 Farm Management ..5
Elective 5	Elective 5	ZY 402 Economic Ento. 5
Elective 3	Elective 3	Elective 3

Total—211 quarter hours

Major in Agronomy and Soils

FRESHMAN YEAR

(Same as in Agricultural Science except Botany 101 will be substituted for Zoology 102)

SOPHOMORE YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AY 201 Grain Crops 5	AH 204 Animal Biochemistry and Nutrition 5	AH 200 Introductory Animal Husbandry 5
BY 102 General Botany 5	CH 105 Gen. Chemistry 3	AY 304 General Soils 5
CH 203 Organic Chem. 5	CH 105L Gen. Chem. Lab. ..2	DH 200 Fund. of Dairying ..5
MS Military Training 1	PS 204 Physics 5	MS Military Training 1
PE Physical Education ..1	MS Military Training 1	PE Physical Education ..1
	PE Physical Education ..1	

JUNIOR YEAR

AS 202 Agr. Economics 5	AY 406 Com. Fertilizers 3	AN 303 Farm Mach. & Equipment 5
AN 301 Drainage & Terracing 5	HF 308 Vegetable Gard. 5	AY 306 Soil Morph. & Survey 3
BY 306 Fundamentals of Plant Physiology 5	PH 301 General Poultry 5	JM 315 Agr. Journalism 3
Elective 3	SP 305 Public Speaking 3	Electives 8
	Elective 3	

SENIOR YEAR

AS 401 Farm Management ..5	AY 401 Forage Crops 5	AY 402 Soil Fertility 5
AY 404 Cotton Prod. 5	BY 309 Plant Pathology 5	ZY 402 Economic Ento. 5
FY 313 Farm Forestry 5	Electives 8	ZY 300 Genetics 5
Elective 3		Elective 3

Total—212 quarter hours

RECOMMENDED ELECTIVES

AH 401 Swine Production 5	AY 454 Soils Genesis and Classification 5
AH 402 Beef Cattle Production 5	AY 455 Soil Physics 5
AY 403 Grazing Systems in Alabama 5	BY 401 Experimental Statistics for Biological Sciences 5
AY 405 Turf and its Management 3	BY 413 General Plant Ecology 5
AY 409 Seed Production 3	BY 415 Developmental Plant Anatomy 5
AY 410 Methods of Plant Breeding 3	CH 206 Quantitative Analysis 5
AY 453 Geomorphology 5	

Students planning to major in Agronomy and Soils should contact the Head of the Department and be assigned an advisor. Electives will be selected in consultation with their advisor in line with their interests and needs. Students desiring further training may plan their course of study so as to be prepared for graduate work at this or other institutions.

Major in Animal Science

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AH 200 Intr. An. Husb. 5	EH 101 English Comp. 5	CH 105 Gen. Chemistry 3
CH 103 Gen. Chemistry 4	CH 104 Gen. Chemistry 4	CH 105L Gen. Chem. Lab. ..2
CH 103L Gen. Chem. Lab. ..1	CH 104L Gen. Chem. Lab. ..1	EH 102 English Comp. 5
MH 111 Intr. College Math. 5	MH 112 Intr. College Math. 5	ZY 101 Gen. Zoology 5
AS 101 Agr. Orientation 0	MS Military Training 1	MS Military Training 1
MS Military Training 1	PE Physical Education ..1	PE Physical Education ..1
PE Physical Education ..1		

SOPHOMORE YEAR

HY 206 United States Govt. 5	BY 101 Gen. Botany 5	AH 204 Animal Biochemistry & Nutrition 5
VM 200 Gen. Microbiology ..5	CH 203 Organic or	AS 202 Agri. Economics 5
ZY 102 Gen. Zoology 5	CH 206 Quantitative Chem. 5	AY 304 Gen. Soils 5
MS Military Training 1	JM 315 Agri. Journalism 3	MS Military Training 1
PE Physical Education ..1	SP 305 Public Speaking 3	PE Physical Education ..1
	MS Military Training 1	
	PE Physical Education ..1	

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
ZY 300 Genetics 5	AH 403 Animal Breeding 5	VM 422 Animal Diseases 5
Electives 13	VM 421 Animal Physiology ..5	ZY 402 Economic Ento. 5
	Electives 8	Electives 8

SENIOR YEAR

Electives 18	AH 411 Seminar 1	Electives 18
	Electives 18	

Total—212 quarter hours

Students desiring to major in Animal Science will be assigned an advisor. A major may elect either a Terminal Degree Option or a Graduate Preparatory Option and will during his sophomore year with the assistance and approval of his advisor, develop a plan of study for the junior and senior years from lists of approved elective courses. As approved by the Dean of Agriculture and the student's advisor, substitutions may be permitted to meet specific needs of individual students.

Major in Dairy Manufacturing

FRESHMAN YEAR

(Same as in Agricultural Science)

SOPHOMORE YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
BY 101 General Botany 5	CH 105 Gen. Chemistry 3	AS 202 Agr. Economics 5
DH 200 Fund. of Dairying ..5	CH 105L Gen. Chem. Lab. ..2	CH 203 Organic Chem. or
PS 204 Physics or	EC 213 Engineering Acctg.	CH 207 Organic Chem. 5
PS 205 Intr. Physics 5	& Cost Control 5	EC 214 Engineering Acctg.
LY 101 Use of the Library ..1	JM 315 Agr. Journalism 3	& Cost Control 5
MS Military Training 1	SP 305 Public Speaking 3	MS Military Training 1
PE Physical Education ..1	MS Military Training 1	PE Physical Education ..1
	PE Physical Education ..1	

JUNIOR YEAR

AH 204 Animal Biochemistry and Nutrition 5	DH 308 Dairy Bacteriology ..5	EH 345 Business and Professional Writing 5
DH 305 Prac. Dairy Tests 5	DH 311 Judging Dairy Prod. 1	DH 310 Technical Control of Dairy Products 5
VM 420 Gen. Microbiology ..5	Electives 13	DH 312 Judging Dairy Prod. 1
Elective 3		Electives 8

SENIOR YEAR

DH 408 Dairy Plant Procedures 5	DH 409 Dairy Plant Procedures 5	DH 410 Dairy Plant Procedures 5
DH 313 Judging Dairy Products 1	AN 406 Dairy Engineering ..3	Electives 13
Electives 13	DH 411 Food Plant Sanitation 3	
	Electives 8	

Total—216 quarter hours

Of the 58 elective credits, at least 35 credits must be chosen from one of the categories listed below:

I. GENERAL AGRICULTURE	II. ECONOMICS	III. BASIC SCIENCE*
AH 200 Intr. An. Husb. 5	EC 331 Principles of Mktg. ..5	BY 401 Exp. Statistics for Biological Sciences ..5
AS 401 Farm Management ..5	EC 333 Salesmanship 5	CH 206 Quant. Analysis 5
AS 301 Agricultural Mktg. ..5	EC 341 Business Law 5	CH 208 Organic Chemistry ..5
AY 201 Grain Crops 5	EC 345 Statistics 5	CH 316 Physical Chemistry ..5
AY 304 General Soils 5	EC 404 Office Management 5	CH 418 Biochemistry 5
AY 401 Forage Crops 5	EC 432 Advertising 5	CH 419 Biochemistry 5
DH 314-315-316 Dairy Cattle Judging 3	EC 442 Personnel Mgt. 5	CH 420 Biochemistry 5
DH 317 Dairy Cattle Feeding & Management ..5	EC 463 Corp. Finance 5	PS 206 Intr. Physics 5
DH 403 Dairy Farm Prac. 5	IM 306 Industrial Mgt. 5	FL 151-152 German or
PH 301 General Poultry 5		FL 121-122 French 10

* Courses recommended for students planning to take graduate work.

All students majoring in dairy manufacturing shall have had at least one summer practical dairy plant experience before graduation.

Major in Dairy Production

FRESHMAN YEAR

(Same as in Agricultural Science)

SOPHOMORE YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 105 Gen. Chemistry 3	AS 202 Agr. Economics 5	AH 204 Animal Biochemistry and Nutrition 5
CH 105L Gen. Chem. Lab. ..2	BY 101 General Botany 5	AN 301 Drainage & Terracing 5
DH 200 Fund. of Dairying ..5	CH 203 or 207 Organic Chemistry* 5	AY 201 Grain Crops 5
PS 204 Physics 5	MS Military Training 1	MS Military Training 1
LY 101 Use of the Library ..1	PE Physical Education ..1	PE Physical Education ..1
MS Military Training 1		
PE Physical Education ..1		

JUNIOR YEAR

AY 304 General Soils 5	AY 401 Forage Crops 5	EH 345 Bus. & Prof. Writing 5
VM 200 Gen. Microbiology ..5	DH 308 Dairy Bacteriology ..5	VM 422 Animal Disease Control 5
SP 305 Public Speaking 3	VM 421 Animal Physiology ..5	ZY 300 Genetics 5
Elective 5	DH 314 Judging Dairy Cattle 1	DH 315 Judging Dairy Cattle 1
	JM 315 Agr. Journalism 3	Elective 3

SENIOR YEAR

AN 303 Farm Machinery & Equipment 5	AH 403 Animal Breeding 5	AS 401 Farm Management ..5
DH 408 Dairy Plant Proc. 5	PH 301 General Poultry 5	DH 403 Dairy Farm Prac. 5
DH 317 Dairy Cattle Feeding & Mgt. 5	DH 402 Artificial Insemination 3	ZY 402 Economic Ento. 5
DH 316 Judging Dairy Cattle 1	Elective** 5	Elective 3
Elective 3		

Total—214 quarter hours

* If anticipating graduate study, CH 207 is recommended, with CH 208 also being taken as an elective.

** If graduate study is planned, CH 206 Quantitative Analysis should be taken.

Major in Horticulture

FRESHMAN YEAR

(Same as in Agricultural Science except Botany 101 will be substituted for Zoology 102)

SOPHOMORE YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
BY 102 General Botany 5	AS 202 Agr. Economics 5	AH 204 Animal Biochemistry and Nutrition 5
HF 201 Orchard Mgt. 3	CH 105 Gen. Chemistry 3	AN 303 Farm Machinery 5
PS 204 Physics 5	CH 105L Gen. Chem. Lab. ..2	HF 221 Landscape Gardening 5
MS Military Training 1	HF 224 Plant Propagation ..5	MS Military Training 1
PE Physical Education ..1	MS Military Training 1	PE Physical Education ..1
	PE Physical Education ..1	

JUNIOR YEAR

AY 304 General Soils 5	AS 301 Agr. Marketing 5	AN 301 Drainage & Ter. 5
PH 301 General Poultry 5	BY 306 Plant Physiology 5	AY 402 Soil Fertility 5
SP 305 Public Speaking 3	HF 308 Vegetable Gardening 5	HF 407 Preparation and Handling of Fruits and Vegetables 5
JM 315 Agr. Journalism 3	Elective 3	Elective 3
Elective 3		

SENIOR YEAR

HF 401 Truck Crops 5	BY 309 Plant Pathology 5	HF 405 Small Fruits 5
HF 323 Floriculture or HF 406 Nut Culture 5	HF 404 Fruit Growing 5	ZY 402 Economic Ento. 5
Electives 8	Electives 8	Electives 8

Total—211 quarter hours

APPROVED ELECTIVES

AH 200 Introductory Animal Husbandry 5	EC 333 Salesmanship 5
AS 401 Farm Management 5	FY 313 Farm Forestry 5
AS 303 Agricultural Cooperatives 3	HF 225 Flower Arranging 3
AY 201 Grain Crops 5	HF 402 Plant Breeding 5
AY 401 Forage Crops 5	HF 421 Arboriculture 5
AY 406 Commercial Fertilizers 3	HF 423 Nursery Management 5
CH 203 Organic Chemistry 5	PG 310 Reading Improvement 3
CH 206 Quantitative Analysis 5	SA 113 Personal Typewriting 3
CH 342 Geology 3	ZY 300 Genetics 5
DH 200 Fundamentals of Dairying 5	ZY 406 Bee Culture 3

Major in Poultry Science

FRESHMAN YEAR
(Same as in Agricultural Science)

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AS 202	Agri. Economics 5	EC 212	Intr. Accounting 5	AH 204	Animal Biochemistry and Nutrition 5
BY 101	General Botany 5	PH 301	General Poultry 5	EC 103	Economic Geog. 5
EC 211	Intr. Accounting 5	PS 204	Physics 5	ZY 300	Genetics 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

EC 341	Business Law 5	AS 301	Agri. Marketing 5	AS 361	Rural Sociology 5
EH 107	Intr. to Literature 3	SP 231	Public Speaking 5	PG 211	Gen. Psychology 5
JM 315	Agri. Journalism 3	SY 201	Intr. to Sociology 5	PH 408	Poultry Diseases 5
VM 200	Gen. Microbiology ..5		Elective 3		Elective 3
	Elective 3				

SENIOR YEAR

EC 333	Salesmanship 5	EH 345	Bus. & Prof. Writing 5	AN 307	Farm Wiring & Motors 3
PH 302	Poultry Meat Prod. 3	PH 404	Poul. Management ..5	AS 401	Farm Management ..5
PH 405	Poultry Feeding 3	AS 304	Agri. Finance 3	PH 410	Poultry Breeding 3
ZY 311	Gen. Parasitology or	AN 306	Farm Bldg. Const. 3	PH 411	Poultry Marketing ..3
ZY 402	Economic Ento. 5		Elective 3		Elective 3
	Elective 3				

Total—212 quarter hours

Electives to be approved by departmental representatives.

Agricultural Administration

The course in Agricultural Adminstration is designed both for those students who plan a career in businesses closely related to agriculture, and for those interested in the economics of agricultural production and marketing and in public policies affecting agriculture. The curriculum is administered through a faculty advisor system wherein individual student programs of study are developed in accordance with individual student needs and interests. The need for broad training, rather than narrow specialization, is emphasized.

The curriculum not only combines both business and technical agricultural courses, but through selection of electives it provides an opportunity for students to emphasize training in agri-business, in Agricultural Economics, or in selected production fields. The curriculum leads to a degree of Bachelor of Science in Agricultural Administration.

The demand for graduates who have both business and applied agricultural training is increasing. In both public and private agencies, increasing attention to rural economic and social problems points to enlarged opportunities for qualified workers in teaching, research, sales, public relations, services, administration, and private employment in these fields. By properly selecting electives, students may prepare themselves to become (1) owners or managers of firms that produce, process, or market agricultural products; (2) teachers, research workers, or educational workers in the field; (3) public servants in the capacity of farm management or marketing specialists, commodity analysts, market news reporters, inspectors, credit analysts, etc.; or (4) employees of business firms that handle agricultural products or that service agricultural production and marketing firms.

Curriculum in Agricultural Administration (AM)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	BY 101	Gen. Botany 5
MH 111	Intr. College Math. 5	CH 103	Gen. Chemistry 4	CH 104	Gen. Chemistry 4
ZY 101	Gen. Zoology 5	CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1
AS 101	Agr. Orientation 0	MH 112	Intr. College Math. 5	HY 107	United States History 5
MS	Military Training 1	AS 102	Agri. Economics Orientation 0	LY 101	Use of Library 1
PE	Physical Education ..1	MS	Military Training 1	MS	Military Training 1
		PE	Physical Education ..1	PE	Physical Education ..1

SOPHOMORE YEAR

AH 204	Animal Biochemistry and Nutrition 5	EC 212	Intr. Accounting 5	EC 341	Business Law 5
AS 202	Agr. Economics 5	DH 200	Fund. of Dairying ..5	HY 206	United States Govt. 5
EC 211	Intr. Accounting 5	PS 204	Physics 5	PH 301	General Poultry 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

AH 303	Livestock Prod. 5	AS 301	Agr. Marketing 5	AN 303	Farm Mach. & Eqp. 5
AY 307	General Soils 5	AS 361	Rural Sociology 5	EC 345	Statistics 5
EC 360	Money & Banking ..5	SP 305	Public Speaking 3	EH 345	Bus. & Prof. Writ. ..5
	Elective 3		Electives 6		Elective 3

SENIOR YEAR

AS 410	Agr. Bus. Mgt. 3	AS 403	Agr. Prices 3	AS 401	Farm Management ..5
EC 446	Business Cycles 5	AY 401	Forage Crops 5	AS 405	Agr. Policy 3
	Electives 10	FY 313	Farm Forestry 5		Electives 10
		AS 490	Senior Seminar 1		
			Elective 4		

Total—212 quarter hours

RECOMMENDED ELECTIVES

GROUP 1		GROUP 2		GROUP 3	
AH 302	Feeds & Feeding 3	AS 303	Agri. Cooperatives ..3	PA 301	Philosophy 3
AH 401	Swine Production 5	AS 302	Farm Records 3	PA 302	Ethics 3
AH 402	Beef Cattle Prod. 5	AS 304	Agri. Finance 3	PA 308	Intr. Logic 3
AN 301	Drainage & Ter. 5	AS 305	Farm Appraisal 3		or
AN 305	Farm Trac. & Eng. 5	EC 332	Credits & Col. 5	PA 307	Scientific Rsn'g 5
AY 201	Grain Crops 5	EC 333	Salesmanship 5	PG 211	Gen. Psychology 5
AY 404	Cotton Production ..5	EC 432	Advertising 5	PG 330	Social Psychology 5
AY 406	Commercial Fert. 3	EC 451	Intr. Ec. Theory 5	PG 360	Applied Psychology 5
AY 407	Soil Management ..5	EC 463	Corp. Finance 5	SY 201	Gen. Sociology 5
HF 401	Truck Crops 5	EC 464	Investments 5	SY 311	Tech. & Soc. Chg. ..3
HF 404	Fruit Growing 5	EC 465	Public Finance 5		
ZY 300	Genetics 5	EC 474	Adv. Statistics 5		

Students desiring to major in Agricultural Administration should contact the Head of the Department of Agricultural Economics as early in their college careers as possible in order that they may be assigned to a faculty advisor. Electives will be selected in consultation with faculty advisors based on student needs and interests.

Agricultural Engineering

This is a technical field designed to train engineers in the agricultural areas. The curriculum includes courses basic to all types of engineering, courses with particular emphasis on engineering problems in agriculture, and general agricultural courses. The curriculum leads to a degree of Bachelor of Science in Agricultural Engineering. Students completing the curriculum have opportunities in many types of work where both engineering and agricultural knowledge are required.

The Agricultural Engineering curriculum is accredited by the Engineers' Council for Professional Development.

Curriculum in Agricultural Engineering (AN)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 103	Gen. Chemistry 4	CH 104	Gen. Chemistry 4	EH 108	Classical Lit. 5
CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1	CH 105	Gen. Chemistry 3
EH 101	English Comp. 5	EH 102	English Comp. 5	CH 105L	Gen. Chem. Lab. ..2
*MH 111	Intr. College Math. 5	MH 112	Intr. College Math. 5	MH 161	Anal. Geo. & Cal. ..5
EG 102	Engr. Draw. I 2	EG 104	Des. Geometry 2	EG 105	Engr. Draw. II 2
AS 101	Agr. Orientation 0	AN 101	Intr. Agr. Engr. 0	AN 102	Intr. Agr. Engr. 0
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
					Humanistic or Social Elective 1

SOPHOMORE YEAR

AN 201	Soil & Implement Mechanics 5	EC 200	Gen. Economics or	ME 205	Applied Mechanics ..5
MH 262	Anal. Geo. & Cal. ..5	AS 202	Agr. Economics 5	MH 264	Anal. Geo. & Cal. ..5
PS 201	Gen. Physics, Mechanics 5	ME 202	Engr. Materials Science Structure 3	PS 203	Gen. Physics, Elec. & Magnetism 5
CE 210	Engr. Surveying 3	MH 263	Anal. Geo. & Cal. ..5	EG 204	Kinematics of Machines 3
MS	Military Training 1	PS 202	Gen. Physics, Heat, Sound & Light 5	MS	Military Training 1
PE	Physical Education ..1	MS	Military Training 1	PE	Physical Education ..1
		PE	Physical Education ..1		

JUNIOR YEAR

HY 107	United States History 5	AN 302	Farm Structures 5	AN 304	Farm Elec. Design 5
EE 202	Elec. & Mag. Cir. 5	ME 310	Thermodynamics 5	AY 304	General Soils 5
ME 306	Strength of Mat. I ..5	EG 205	Applied Graphic Statics 2	ME 459	Machine Design I ..4
	Agr. Elective 5	EH 304	Technical Writing ..3	ME 434	Fluid Mech. and Heat Transfer 5
			Agr. Elective 5		

SENIOR YEAR

AN 403	Soil & Water Engr. 5	AN 401	Mechanics of Tractor Power 5	AN 405	Supplemental Irrigation 5
AN 407	Agri. Machinery Design Analysis 3	AN 404	Agr. Process Engr. ..5	AN 408	Agri. Tractor Design Analysis 3
CE 406	Hydraulics Lab. 1		Agr. Elective 5	SP 305	Public Speaking 3
	Humanistic or Social Electives 6		Humanistic or Social Elective 5		Agr. Elective 5
	Agr. Elective 5				Humanistic or Social Elective 3

Total—236 quarter hours

* Students taking MH 160 in lieu of MH 111 and MH 112 will be encouraged to take MH 361 following MH 264.

ELECTIVES

Courses used for electives must be selected from the list of Humanistic-Social Studies below, subject to approval of the Department Head.

Six hours of Advanced ROTC may be substituted for SP 305 Public Speaking and EH 304 Technical Writing.

Requirements for the agricultural electives may be met by taking five hours from the following groups of courses: Group 1. AY 401 Forage Crops; AY 201 Grain Crops; AY 404 Cotton Prod.; AY 402 Soils and Soil Fertility; and ten hours from each of the following groups of courses: Group 2. FY 313 Farm Forestry; AS 401 Farm Mgt.; AS 301 Agr. Marketing; ZY 402 Eco. Entomology; and Group 3. AH 200 Intro. to Animal Husbandry; AH 303 Livestock Production; BY 101 General Botany; DH 200 Fundamentals of Dairying; PH 301 General Poultry.

APPROVED HUMANISTIC-SOCIAL ELECTIVES

HISTORY AND GOVERNMENT

HY 204	Hist. of the Modern World 3	HY 407	Political Science 5
HY 206	United States Government 5	HY 460	Great Leaders of History 3
HY 207	or 208 World History 5	HY 482	History of the South 3
HY 314	United States Colonial History 3	HY	Current Events 1
HY 315	International Organization 3		
HY 322	The U.S. in World Affairs 3		
HY 371	History of the West 3		

LITERATURE

EH 208	Literature of the Western World 3	EH 350	Shakespeare's Greatest Plays 3
EH 320	An Introduction to Drama 3	EH 355	Masterpieces of World Literature 3
		EH 365	Southern Literature 3
		EH 381	The Literature of the Age of Reason 3
		EH 385	The Impact of Science and Technology upon Modern Literature 3
		SP 334	Great American Speeches 3

THE ARTS

AT 332	American Painting and Sculpture 3	DR 313	Drama Appreciation I 3
AT 431	Contemporary Art 3	DR 314	Drama Appreciation II 3
AR 360	Appreciation of Architecture 3	MU 373	Appreciation of Music 3
		MU 374	Masterpieces of Music 3

ECONOMICS

EC 206 Socio-Economic Foundations of Contemporary America 3
EC 301 Geo-Political Basis of World Powers 3
EC 405 Cultural Geography of the World 5
EC 407 World Resources & Their Utilization 5

SOCIOLOGY

SY 201 Introduction to Sociology 5
SY 204 Social Behavior 5
SY 307 The Court and Penal Administration 3
SY 311 Technology and Social Change 3
SY 403 Regional Sociology 5

PHILOSOPHY AND RELIGION

PA 301 Introduction to Philosophy 3
PA 302 Introduction to Ethics 3
PA 330 Philosophy of Religion 5
PA 307 Scientific Reasoning 5
PA 308 Introduction to Logic 3
PA 440 American Philosophy 5
RE 303 Christian Ethics 5
RE 305 Comparative Religions 3
RE 306 Studies of the Gospels 3

PSYCHOLOGY

PG 211 General Psychology 5
PG 311 Behavior of Man 3
PG 461 Industrial Psychology 5

Curriculum in Ornamental Horticulture (OH)

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
MH 111 Intr. College Math. 5	BY 102 General Botany 5	CH 103 Gen. Chemistry 4
BY 101 General Botany 5	EH 102 English Comp. 5	CH 103L Gen. Chem. Lab. ..1
EH 101 English Comp. 5	HF 101 Intr. to Orna. Hort. 1	HF 221 Landscape Gard. 5
AS 101 Agr. Orientation 0	MH 112 Intr. College Math. 5	ZY 101 General Zoology 5
MS Military Training 1	MS Military Training 1	MS Military Training 1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

SOPHOMORE YEAR

CH 104 Gen. Chemistry 4	CH 105 Gen. Chemistry 5	EC 200 Gen. Economics 5
CH 104L Gen. Chem. Lab. ..1	CH 105L Gen. Chem. Lab. ..2	HF 321 Plant Materials 5
HF 222 Plant Materials 5	HF 223 Plant Materials 5	JM 315 Agr. Journalism 3
HY 107 United States History 5	HF 224 Plant Propagation 5	SP 305 Public Speaking 3
MS Military Training 1	MS Military Training 1	MS Military Training 1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

JUNIOR YEAR

BY 306 Fundamentals of Plant Physiology 5	AY 304 General Soils 5	EC 211 Intr. Accounting 5
HF 323 Floriculture 5	BY 309 Plant Pathology 5	HF 322 Garden Mgt. 5
ZY 300 Genetics* 5	Tech. Elective 5	Tech. Elective 5
Gen. Elective 3	Gen. Elective 3	Gen. Elective 3

SENIOR YEAR

HF 424 Plant Composition ..5	HF 426 Minor Problems 5	AY 402 Soil Fertility 5
HF 429 Adv. Plant Prop. 5	Tech. Electives 10	ZY 402 Economic Ento. 5
Tech. Elective 5	Gen. Elective 3	Tech. Elective 5
Gen. Elective 3		Gen. Elective 3

*ZY 430 Principles of Heredity may be substituted for ZY 300.

Total—212 quarter hours

TECHNICAL ELECTIVES: Floriculture Field—HF 324 Floriculture, HF 421 Arboriculture, HF 422 Floriculture, HF 423 Nursery Management, HF 425 Flower Shop, HF 427-8 Minor Problems, BY 406 Systematic Botany, AY 406 Commercial Fertilizers, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising; **Landscape Field**—HF 325 Landscape Design I, HF 326 Landscape Design II, HF 327 Landscape Construction, HF 421 Arboriculture, HF 423 Nursery Management, HF 427-8 Minor Problems, BY 406 Systematic Botany, AN 403 Soil and Water Engineering, AY 406 Commercial Fertilizers, EC 212 Introductory Accounting, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising, EC 433 Retail Store Management, EC 434 Purchasing, EC 442 Personnel Management, AT 113 Perspective, AT 317 Packaging; **Nursery Field**—HF 324 Floriculture, HF 421 Arboriculture, HF 422 Floriculture, HF 423 Nursery Management, HF 427-8 Minor Problems, BY 406 Systematic Botany, AY 406 Commercial Fertilizers, AN 403 Soil and Water Engineering, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising; **Flower Shop Field**—HF 324 Floriculture, HF 422 Floriculture, HF 425 Flower Shop, HF 427-8 Minor Problems, AT 113 Perspective, AT 317 Packaging, EC 212 Introductory Accounting, EC 333 Salesmanship, EC 341 Business Law, EC 432 Advertising, EC 433 Retail Store Management, EC 434 Purchasing, EC 442 Personnel Management, BY 406 Systematic Botany.

Forestry

Two curricula are offered in forestry, one in forest management and the other in wood technology. The former leads to the degree Bachelor of Science in Forestry while the other leads to the degree Bachelor of Science in Wood Technology. In addition to these curricula the Department offers an honors program in the area of forest management. This program leads to the degree Bachelor of Science in Forestry (Honors Program).

Training in forest management and administration prepares the student as a land manager. He acquires professional knowledge and skills relating to efficient production of wood as a raw material. He studies policies, techniques and procedures whereby land may be managed for related products and services including water, wildlife and recreation. There is a strong demand for foresters in private industry. Pulp companies, lumber and related industries hire the majority of graduates in the South. State and Federal agencies as well as consulting foresters employ a large number of graduates. The graduate may expect his initial assignments to include land line surveying, timber cruising, timber marking and land and timber purchasing. After experience is gained the graduate will assume more responsibility for land management plans and policies in his capacity as a land manager.

Wood technology is the science of making the most efficient use of the products of the tree. This includes the development of new products as well as more efficient production of standard products. The wood technologist must understand the physics and chemistry of wood as well as its anatomy and structure and must be familiar with various wood products and the methods for manufacturing them. The curriculum is sufficiently flexible that the student may specialize in chemistry, structural design, industrial management or in other fields of his choice by proper selection of his minors in these fields. The wood technologist finds employment with wood manufacturing industries and their suppliers as well as with private and public organizations which carry on research and product development for industry.

The Department of Forestry is accredited by the Society of American Foresters.

Curriculum in Forest Management (FY)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
BY 101	General. Botany 5	BY 102	General Botany 5	CE 201	Surveying I 5
FY 101	Intr. to Forestry 3	CH 103	General Chemistry ..4	CH 104	General Chemistry ..4
FY 104	Forest Cartography 2	CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1
FY 105	For. Convocation* 0	MH 112	Intr. College Math. 5	EH 101	English Comp. 5
MH 111	Intr. College Math. 5	LY 101	Use of Library 1	MS	Military Training 1
AS 101	Agri. Orientation ..0	MS	Military Training 1	PE	Physical Education ..1
MS	Military Training 1	PE	Physical Education ..1		
PE	Physical Education ..1				

SOPHOMORE YEAR

BY 306	Plant Physiology 5	AY 305	General Soils 5	FY 203	Silvics 5
EH 102	English Comp. 5	EH 304	Tech. Writing 3	FY 204	For. Mensuration 5
FY 201	Dendrology 3	FY 202	Dendrology 3	FY 205	Wood Identification 5
PS 205	Intr. Physics 5	PS 206	Intr. Physics 5	MS	Military Training 1
MS	Military Training 1	MS	Military Training 1	PE	Physical Education ..1
PE	Physical Education ..1	PE	Physical Education ..1		

SUMMER CAMP

FY 390 Field Mensuration ..5
FY 391 Forest Engineering ..5
FY 392 Forest Ecology 3
FY 393 Ala. Forest Indust. 3
FY 395 Forest Site Evaluation 2

* This course will be taken in all except Summer Quarters.

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AS 202 Agri. Economics 5	FY 302 Forest Fire Control 3	BY 310 Forest Pathology 5
EC 213 Engineering Acctg. 5	FY 309 Sampling 3	FY 315 Seeding & Planting 3
FY 301 Silviculture 5	FY 316 Forest Economics ..3	FY 310 Adv. Mensuration 3
Elective 3	SP 305 Public Speaking* 3	HY 206 United States Govt. 5
	ZY 101 General Zoology 5	Elective 3
	Elective 3	

SENIOR YEAR

FY 408 Logging 3	FY 407 Forest Mgt. 5	FY 402 Range & Game Mgt. 5
FY 414 Reg. Silviculture 3	FY 417 Photogrammetry 5	FY 418 Adv. Forest Mgt. ..3
FY 427 Forest Valuation 5	FY 435 Forest Products	ZY 305 Forest Entomology 5
FY 434 Forest Policy 3	Merchandising 5	Electives 6
Elective 3	Elective 5	

Total—238 quarter hours

* This course will not be required of students electing an Advanced ROTC program.

ELECTIVES

Fifteen of the 23 elective hours included in the forest management curriculum must be selected from an approved list of humanistic-social electives. Furthermore, a minimum of one course must be selected from each of the following categories:

I. Literature and the Arts, II. Economics and History, and III. Other Social Sciences.***

*** Nine hours of Advanced ROTC may be charged against the humanistic-social elective requirement. The remaining nine hours of Advanced ROTC may be chosen from free electives and the three credit hours normally required for SP 305 Public Speaking.

Honors Program in Forestry

The Honors Program in Forestry has been developed to provide able students opportunity to explore in depth, areas in which they are interested, to prepare for graduate school, or to obtain a more rounded education. The program is flexible, permitting concentration of effort in areas of the student's choosing.

Students in the Forest Management Curriculum may apply for admission to the program following completion, with a cumulative grade point average of 1.75 or better, of the course work requirements through forestry summer camp. Permission for election rests with the Head and Executive Council of the Department of Forestry. Upon admission the student will be assigned to a faculty advisor who will guide him in the preparation of his program.

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AS 202 Agri. Economics 5	FY 309 Sampling 3	ZY 101 General Zoology 5
HY 206 U.S. Government 5	FY 316 Forest Economics 3	Electives 15
FY 301 Silviculture 5	SP 305 Public Speaking* 3	
Elective 3	Electives 10	

SENIOR YEAR

FY 427 Forest Valuation 5	FY 407 Forest Management 5	FY 402 Range & Game Mgt. 5
FY 434 Forest Policy 3	Electives 13	FY 421 Forest Research
Electives 12		Methods** 3
		Electives 10

Total—238 quarter hours

In addition, one of the following courses must be selected: BY 310, Forest Pathology (5); FY 302, Forest Fire Control (3); or ZY 305, Forest Entomology (5).

* This course will not be required for students electing an Advanced ROTC program.

** Any 3 or 5 hour course in statistics may be substituted for FY 421.

The requirements relative to the humanistic-social electives are the same as with the standard forest management curriculum. Thirty of the remaining elective hours are to be chosen, under the supervision of the faculty advisor, so as to develop a distinct program leading to a predetermined goal. None of the thirty hours in the special program may be used for Advanced Military Science.

Curriculum in Wood Technology (WT)

FRESHMAN YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
EH	101	English Comp. 5	EH	102	English Comp. 5	BY	101	General Botany 5
CH	103	General Chemistry ..4	CH	104	General Chemistry ..4	CH	105	General Chemistry ..3
CH	103L	Gen. Chem. Lab. ..1	CH	104L	Gen. Chem. Lab. ..1	CH	105L	Gen. Chem. Lab. ..2
MH	111	Intr. College Math. 5	MH	112	Intr. College Math. 5	EG	102	Eng. Drawing 2
FY	105	Forestry Convo.* 0	FY	101	Intr. to Forestry 3	MH	161	Anal. Geom. & Cal. 5
AS	101	Agri. Orientation 0	MS		Military Training 1	MS		Military Training 1
MS		Military Training 1	PE		Physical Education ..1	PE		Physical Education ..1
PE		Physical Education ..1						

SOPHOMORE YEAR

BY	102	General Botany 5	FY	202	Dendrology 3	AS	202	Agri. Economics 5
FY	201	Dendrology 3	FY	206	Wood Measurement** 3	EH	304	Technical Writing ..3
PS	205	Intr. Physics 5	PS	206	Intr. Physics 5	FY	205	Wood Identification 5
		Elective 5			Elective 5	MS		Military Training 1
MS		Military Training 1	MS		Military Training 1	PE		Physical Education ..1
PE		Physical Education ..1	PE		Physical Education ..1			

JUNIOR YEAR

CH	203	Organic Chemistry ..5	FY	432	Seas. & Pres.** 5	FY	433	Seasoning & Pres. Lab.** 2
EC	213	Eng. Acct. & Cost Control 5	SP	305	Public Speaking 3	HY	206	U.S. Government 5
FY	311	Wood Tech. I** 5	ZY	101	General Zoology 5			Electives 10
		Elective 5			Elective 5			

SENIOR YEAR

FY	430	Wood Tech. II** ..5	FY	425	Wood Gluing & Lam.** 5	FY	421	Forest Res. Methods*** 3
		Electives 15			Electives 13	FY	431	Wood Tech. III** ..5
								Electives 6

Total—216 quarter hours

* This course will be taken in all except Summer Quarters.

** Alternate year offering.

*** Any 3 or 5 hour course in statistics may be substituted for FY 421.

Note: Sufficient latitude is allowed that the student may plan his elective work with his advisor to fulfill his personal objectives while in college. Two minors, however, will be required, one of which must be in mathematics, chemistry or engineering. Other suggested minors are: industrial management, economics, botany, foreign language, zoology, physics, English, business administration, education, and forest management. Each minor shall consist of a minimum of 30 quarter hours in a series of related subjects. Prior to registration for the second quarter of the junior year, the planned course content of the two minors must be approved by the department head. A student may always substitute a more intensive group of courses for one or more of the required courses, provided the same breadth of coverage is maintained.

As a part of the requirement for the degree with a major in wood technology, the student must complete a minimum of three weeks of supervised industrial tours of forest products industries. A satisfactory report on these tours must be submitted to the department head prior to graduation.

Curriculum in Biological Sciences (BI)
Major in Botany

FRESHMAN YEAR

(Same as in Agricultural Science)

SOPHOMORE YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
BY	101	General Botany 5	CH	203	Organic Chem. or CH 207 Organic Chem. 5	AS	202	Agricultural Eco. or EC 200 General Economics ..5
CH	105	Gen. Chemistry 3	BY	102	General Botany 5	BY	306	Fundamentals of Plant Physiology 5
CH	105L	Gen. Chem. Lab. ..2	PS	206	Intr. Physics 5	EH	390	Advanced Comp. 5
PS	205	Intr. Physics 5	MS		Military Training 1	MS		Military Training 1
MS		Military Training 1	PE		Physical Education ..1	PE		Physical Education ..1
PE		Physical Education ..1						

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
FL 121 Elem. French or	AY 304 General Soils 5	BY 406 Systematic Botany ..5
FL 151 Elem. German 5	BY 309 Gen. Plant	ZY 304 Gen. Entomology or
SP 305 Public Speaking 3	Pathology 5	ZY 402 Econ. Entomology ..5
VM 420 Gen. Microbiology ..5	FL 122 Elem. French or	Electives 8
Elective 5	FL 152 Elem. German 5	
	Elective 3	

SENIOR YEAR

ZY 300 Genetics 5	AY 401 Forage Crops 5	AY 402 Soil Fertility 5
Electives 13	Electives 13	Electives 13

Total—210 quarter hours

Of the 55 elective hours, 35 must be chosen from the following lists, with 15 in Botany courses. The remaining 20 may be chosen from other courses in these lists or from general electives.

BASIC SCIENCE

BY 310 Forest Pathology 5
BY 401 Exp. Statistics for Biological Sciences ..5
BY 410 Aquatic Plants 5
BY 413 Gen. Plant Ecology 5
BY 415 Developmental Plant Anatomy 5
BY 416 Plant Microtechnique 5
BY 420 Weed Iden. and Control 5
BY 430 Nematode Diseases of Plants 3
CH 206 Quant. Analysis 5
CH 208 Organic Chemistry ..5
CH 301 Biochemistry 5
MH 161, 262, 263, 264 Analytic Geometry & Calculus 20
PS 217 Astronomy 3
ZY 401 Invertebrate Zoology 5
ZY 415 Limnology 5

GENERAL AGRICULTURE

AH 204 Animal Biochemistry and Nutrition 5
AN 303 Farm Mach. and Equip. 5
AS 301 Agri. Marketing 5
AY 201 Grain Crops 5
AY 404 Cotton Prod. 5
AY 405 Turf. & Its Mgt. 3
AY 406 Commercial Fertilizers 3
AY 409 Seed Prod. 3
FY 313 Farm Forestry 5
HF 201 Orchard Mgt. 5
HF 308 Vegetable Gardening 5
HF 421 Arboriculture 5

HUMANISTIC & SOCIAL SCIENCES

AT 332 Am. Painting and Sculpture 3
AT 431 Contemporary Art ..3
DR 313 Drama Apprec. I 3
DR 314 Drama Apprec. II 3
EC 206 Socio-Eco. Found. of Contemp. Am. ..3
EC 301 Geo-Political Basis of World Powers 3
EC 405 Cultural Geography of the World 5
EH 310 Word Study 3
EH 355 Masterpieces of World Literature 3
EH 365 Southern Literature 3
EH 385 The Impact of Sci. & Tech. upon Modern Literature ..3
HY 206 United States Govt. 5
HY 322 The U.S. in World Affairs 3
HY 407 Political Science 5
MU 351 Music History I 3
PA 301 Intr. to Philosophy 3
PA 302 Intr. to Ethics 3
PA 307 Scientific Reason. 5
PG 211 Gen. Psychology 5
RE 301 Religion and Modern Thought 3

Students desiring to major in Botany should contact the Head of the Department as soon as possible in their college careers, so that they may be assigned to an advisor. Electives will be chosen after consultation with their advisors to fit their interest and needs.

Majors in Zoological Sciences

Options: Entomology, Fisheries, Wildlife, Zoology

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EH 101 English Comp. 5	CH 103 General Chemistry ..4	BY 101 General Botany 5
MH 111 Intr. College Math. 5	CH 103L Gen. Chem. Lab. ..1	CH 104 General Chemistry ..4
ZY 101 General Zoology 5	MH 112 College Math. 5	CH 104L Gen. Chem. Lab. ..1
ZY 100 Zool. Orientation 0	ZY 102 General Zoology 5	EH 102 English Comp. 5
MS Military Training 1	AS 101 Agri. Orientation 0	MS Military Training 1
PE Physical Education ..1	MS Military Training 1	PE Physical Education ..1
	PE Physical Education ..1	

SOPHOMORE YEAR

BY 102 General Botany 5	CH 207 Organic Chemistry or	CH 208 Organic Chemistry or
PS 205 Intr. Physics 5	CH 203 Organic Chemistry* 5	AH 204 Animal Biochemistry
ZY 304 Gen. Entomology 5	HY 107 United States Hist. 5	& Nutrition* 5
MS Military Training 1	PS 206 Intr. Physics 5	AS 202 Agri. Economics 5
PE Physical Education ..1	MS Military Training 1	ZY 300 Genetics 5
	PE Physical Education ..1	MS Military Training 1
		PE Physical Education ..1

* For students who will not attend graduate school.

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
Electives 18	ZY 301 Comp. Anatomy 5	ZY 306 Principles of
	Electives 13	Animal Ecology 3
		Electives 16

SENIOR YEAR

ZY 411 Parasitology 5	ZY 401 Invert. Zoology 5	Electives 18
ZY 424 Animal Physiology ..5	Electives 13	
Electives 8		

Total—211 quarter hours

GROUP ELECTIVES—ZOOLOGY AND ENTOMOLOGY

Students in Zoology and/or Entomology must take a minimum of 40 hours from the group electives listed below, including EH 304, SP 305, ZY 308, ZY 421 or 422, and VM 200. Other electives are free, except that all electives must be approved by the faculty advisor.

AY 304 Soils 5
AY 401 Forage Crops 5
BY 309 Plant Pathology 5
BY 401 Biometry 5
BY 406 Systematic Botany 5
BY 413 Plant Ecology 5
EH 304 Technical Writing 3
FL 121-22 Elementary French 10
FL 131-32 Elementary Spanish 10
FL 151-52 Elementary German 10
FY 313 Farm Forestry 5
SP 305 Public Speaking 3
ZY 302 Vertebrate Embryology 5
ZY 308 Micrology 5
ZY 402 Economic Entomology 5
ZY 404 Medical Entomology 5
ZY 405 Forest Insects 5
ZY 406 Bee Culture 3
ZY 407 Insect Morphology 5
ZY 409 Histology 5
ZY 410 Systematic Entomology 5
ZY 421 Vertebrate Zoology I 5
ZY 422 Vertebrate Zoology II 5
ZY 435 Marine Biology 3
VM 200 Microbiology 5

GROUP ELECTIVES—FISHERIES AND WILDLIFE

Students in Fisheries and/or Wildlife must take a minimum of 40 hours from the group electives listed below, including EH 304, SP 305, ZY 421 or 422, ZY 426, and ZY 436. Other electives are free, except that all electives must be approved by the faculty advisor.

AY 304 Soils 5
AY 401 Forage Crops 5
BY 401 Experimental Statistics for Biological Sciences 5
BY 406 Systematic Botany 5
BY 410 Aquatic Plants 5
BY 413 Plant Ecology 5
EH 304 Technical Writing 3
FL 121-22 Elementary French 10
FL 131-32 Elementary Spanish 10
FL 151-52 Elementary German 10
FY 201 Dendrology 3
FY 202 Dendrology 3
FY 203 Silvics 5
FY 301 Silviculture 5
FY 313 Farm Forestry 5
FY 434 Forest Policy 2
SP 305 Public Speaking 3
VM 200 Microbiology 5
ZY 207 Birds 3
ZY 414 Aquatic Insect Taxonomy 3
ZY 415 Limnology 5
ZY 421 Vertebrate Zoology I 5
ZY 422 Vertebrate Zoology II 5
ZY 426 Game Management 5
ZY 428 Hatchery Management 3
ZY 435 Marine Biology 3
ZY 436 Management of Impounded Waters ..3
ZY 437 Fisheries Biology 3
ZY 438 Wildlife Techniques 3

School of Air Science

COLONEL RALPH I. WILLIAMS
Commandant and Professor of Air Science

THE AIR FORCE ROTC was instituted at Auburn University in the Fall of 1946 for the purpose of training AFROTC cadets who have the qualities and attributes essential to their progressive and continued development as officers in the reserve and regular Air Force.

The instruction is designed to provide the Air Force ROTC students with a knowledge and understanding of the characteristics and capabilities of aerospace; and the principal weapons, operational factors, and organizational units which the United States Air Force employs in accomplishing its missions.

The curriculum in Air Science is divided into two courses, basic and advanced. A description of these courses, requirements for entrance, etc., is outlined below.

Basic Course

The Air Force course of study normally pursued by the student during his freshman and sophomore academic years is commonly referred to as the AFROTC Basic Course. One credit hour is allowed for each quarter of the two-year basic course successfully completed. Leadership Laboratory (drill) is scheduled each Tuesday and Thursday from 1:00 to 2:00 p.m.

In the freshman year classroom activity of three hours per week plus two hours of drill are required during one quarter. During the other two quarters the student will attend drill only (Leadership Laboratory). Some other course being pursued can be designated by the Professor of Air Science as fulfilling ROTC compulsory requirements. In the sophomore year, in addition to two hours of drill, classroom activity of two hours per week is required for all three quarters. Four quarters of classroom activity and six quarters of Leadership Laboratory (drill) must be successfully completed to satisfy the University's military requirement in the Basic ROTC course.

Advanced Course

Advanced Air Force ROTC is a program designed to provide highly qualified junior officers for the United States Air Force. Enrollment in the Advanced Course is based upon such factors as leadership, qualification and desire for flying training, academic major, scholastic achievement, and physical qualifications. Successful completion of the Advanced Course qualifies the student for consideration of appointment as a Second Lieutenant in the USAF.

The Advanced Course consists of a six-quarter course, normally taken during the junior and senior years. Three credit hours are allowed for each quarter. For limitation on credit allowed toward meeting engineering degree requirements, see engineering curricula. Six hours of instruction are taken per week, four classroom periods and two leadership laboratory periods. Students are paid at the rate of 90 cents per day while enrolled in the Advanced Course.

An advanced student selected for enrollment in Category I-P (Pilot) will be given 36½ hours of actual flying and 35 hours of ground instruction, which may qualify him for a private flying certificate.

An AFROTC summer training period of four weeks duration must be attended by the student before he becomes eligible for a commission. Summer training is normally accomplished during the summer between the junior and senior years. Uniforms, quarters and rations are furnished by the government during the training period as well as travel expenses to and from camp. The requirements for the advanced course are:

1. United States Citizenship.
2. Be physically qualified in accordance with standards prescribed by the Department of the Air Force.
3. Be under 28 years of age at time of graduation and completion of the Advanced Course for an appointment as a Reserve of the Air Force in the grade of Second Lieutenant.
4. Students desiring to qualify for an Aeronautical rating in the USAF must not have reached 26½ years of age at time of graduation and completion of the Advanced Course for an appointment as a Reserve of the Air Force in the grade of Second Lieutenant, and accept an appointment to an Air Force Flight Training School (agree to make formal written application for flight training leading to a military aeronautical rating in the United States Air Force not less than 180 days before scheduled date of graduation).
5. Usually have at least two academic years to complete for graduation.
6. Have an overall scholastic average of 1.0 or higher.
7. Be selected by the Professor of Air Science and the President of the institution.
8. Execute a written agreement with the government to complete the two-year Advanced Course training and to attend one summer camp (four weeks) preferably at the end of the first year of the Advanced Course. Upon completion of the course of instruction therein to accept an appointment as a Reserve of the Air Force in the grade of Second Lieutenant, if tendered, and agree to serve on active duty as a commissioned officer with the United States Air Force, on being ordered thereto by proper authority, for not less than four consecutive years, in the case of Category II (Scientific and Engineering) and Category III (general) cadets and not less than five consecutive years, in the case of category I-P (Pilot) and Category I-N (Navigator), unless sooner relieved of this obligation. (Veterans are exempt from this active duty requirement.)
9. Have completed appropriate basic training (2 years Basic AFROTC) or have equivalent credit in lieu thereof, and have attained qualifying scores on Air Force Officer Qualifying Tests as prescribed by the Department of the Air Force.
10. Veterans who desire to enroll in the Advanced Course, may on the basis of previous honorable active U.S. military service, request a waiver of the Basic Course, or portion thereof, as a requirement for entrance. If a student meets all other requirements he will be enrolled at the beginning of his junior year.

Uniforms and Equipment

Basic Student: Uniform commutation.

Advanced Students: Monetary allowance in lieu of uniforms.

All students are required to deposit the sum of $30.00 with the Bursar of the University, prior to enrollment in the AFROTC. They are then furnished a uniform in good condition and other necessary supplies through the AFROTC

Supply Office. Upon completion of the AFROTC Course of Instruction, or upon withdrawal of the student therefrom, the uniform and other supplies are turned in and the deposit returned to the student.

Advanced Air Force students are furnished regulation officer uniforms. These uniforms are purchased by the University which is in turn reimbursed by the Government at a fixed rate. Upon graduation the regulation uniform becomes the property of the advanced student.

Distinguished AFROTC Graduates

Distinguished AFROTC Graduates will be tendered commissions in the Regular Air Force which are the same as commissions received from the Air Force Academy. All other AFROTC graduates will be tendered reserve commissions.

The Professor of Air Science may designate as a Distinguished AFROTC Graduate a cadet who:

1. Was designated a Distinguished AFROTC Cadet and has maintained the required standards between the time of designation and the date of graduation.
2. Has maintained an academic standing in the upper half of his graduating class, the upper third of his AFROTC classes, and an exemplary standing at summer camp.

Universal Military Training and Service Act Deferments

Students enrolled in the AFROTC program may be deferred under the provisions of the Universal Military Training and Service Act, as follows:

1. Students so deferred are required to sign an AFROTC deferment agreement. The undergraduate provisions of the agreement require the student to complete the basic course and to enroll in and complete the advanced course at the proper time, if accepted therefor; and upon completion of termination of the course of instruction therein, to accept a commission, if tendered.
2. This Department will notify the appropriate local Selective Service Board concerning students who have been selected for deferment. Students dropped from Air Force ROTC, failing to meet minimum scholastic requirements, or those not considered potential Advanced Course students will no longer be deferred.
3. Students who decline to fulfill the terms of their AFROTC deferment agreements pertaining to undergraduate work at the institution will be permanently suspended immediately.

School of Architecture and The Arts

WILLIAM A. SPEER, *Dean*

THE SCHOOL OF ARCHITECTURE AND THE ARTS is composed of the Departments of Architecture, Art, Building Technology, Dramatic Arts and Music. Undergraduate degree courses are offered in Architecture, Interior Design, Visual Arts, Industrial Design, Building Construction, Dramatic Arts, and Music. Graduate degree courses are offered in Art and Building Construction. The departments of Dramatic Arts and Music offer sound basic training courses in these fields for students wishing to elect a minor or major concentration in them.

Department of Architecture

The Department of Architecture was established in 1907 and is the oldest in the South. Courses are offered leading to the degrees Bachelor of Architecture and Bachelor of Interior Design.

Admission to the curricula in Architecture and Interior Design is limited. **New students** are admitted directly from high school only in the Fall Quarter. Applications must be filed with the Registrar not later than May 1. Following approval for general admission to the University by the Registrar, applications are reviewed for selection by the Committee on Admissions of the Department of Architecture. **Students qualifying for advanced standing** who have completed not less than one academic year of college work, with preparation in Mathematics and English equivalent to Mathematics 111-112-161 and English 101-2, may be admitted in the Summer Quarter. Applications for admission in the Summer Quarter must be filed with the Registrar not later than April 1 for review by the Committee on Admissions. **All applicants** for admission to Architecture and Interior Design must present scores from at least one of the following testing programs: American College Testing Program (ACT), National Merit Scholarship Qualifying Test (NMSQT), or the Scholastic Ability Test (PSAT and SAT) of the College Entrance Examination Board (CEEB). Applicants whose records indicate the need will be required to report for special testing and a personal conference with a member of the Committee.

Specific high school preparation in mathematics for students in Architecture is described under **Requirements in Mathematics** on page 22. Students in Interior Design must have completed three units of college preparatory mathematics in accordance with these same requirements.

Architecture

The curriculum in Architecture seeks to prepare the student to take his place as a citizen and as a professional among the practitioners of Alabama and the Southeastern region. Since the building industry is one of the three largest in the nation in terms of expenditure and employment, the architect today must accept a concern for the improvement of the physical environment and assume the leadership in evolving effective procedures toward this end. Therefore, in an era of broad technological advancement, the architect

must bring to his work technical knowledge, social insight, creative imagination, and individual integrity.

The Department of Architecture is a member of the Association of Collegiate Schools of Architecture, and the curriculum in Architecture is accredited by the National Architectural Accrediting Board. Training at Auburn University prepares the student for the office experience and the examination required by the registration laws for the practice of architecture in Alabama as well as for examination by the National Council of Architectural Registration Boards.

Curriculum in Architecture (AR)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AR 101	Basic Design 6	AR 102	Basic Design 6	AR 103	Basic Design 6
EH 101	English Comp. 5	EH 102	English Comp. 5	EH 108	Classical Literature 5
MH 111	Intr. College Math. 5	MH 112	Intr. College Math. 5	MH 161	Anal. Geom. & Cal. 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

AR 201	Arch. Design 4	AR 202	Arch. Design 4	AR 203	Arch. Design 4
AR 271	Descriptive Draw. ..2	AR 272	Descriptive Draw. ..2	AR 273	Descriptive Draw. ..2
MH 262	Anal. Geom. & Cal. 5	MH 263	Anal. Geom. & Cal. 5	AR 233	Materials & Constr. 5
PS 205	Physics 5	PS 206	Physics 5	BT 220	Mech. of Structures 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

AR 301	Arch. Design 5	AR 302	Arch. Design 5	AR 303	Arch. Design 5
AR 361	History & Theory of Architecture 3	AR 362	History & Theory of Architecture 3	AR 375	Planning 5
BT 311	Structures I 3	BT 312	Structures II 3	AR 363	History & Theory of Architecture 3
EC 200	General Economics ..5	AR 374	Planning 2	BT 313	Structures III 3
	Elective 3	EC 206	Socio-Economic Foundations or		Elective 3
		SY 311	Tech. & Soc. Change 3		
			Elective 3		

FOURTH YEAR

AR 401	Arch. Design 5	AR 402	Arch. Design 5	AR 403	Arch. Design 5
AR 461	History & Theory of Architecture 3	AR 462	History & Theory of Architecture 3	AR 463	History & Theory of Architecture 3
BT 411	Structures IV 3	BT 412	Structures V 3	BT 413	Structures VI 3
PG 211	Psychology 5	BT 452	Bldg. Equipment I ..3	BT 453	Bldg. Equipment II 3
	Elective 3		Group Elective 5	AR 423	Professional Practice 2
					Elective 3

Summer Requirement: AR 490 Field Project (2) pre-requisite to AR 502.

FIFTH YEAR

AR 501	Arch. Design 5	AR 502	Arch. Design 5	AR 503	Arch. Design 7
AR 521	Professional Practice 5	AR 512	Design Research 2		Seminar 5
BT 541	Bldg. Equip. III 2	AR 522	Professional Practice 5		Group Elective 5
	Seminar 2	AR 532	Materials & Finishes 2		
	Group Elective 5	AT 338	Art History 5		

Total—279 quarter hours

Five-hour elective courses will include either three courses in advanced structures or electives chosen from the group electives in Economics, English, Foreign Languages, History, Philosophy, Psychology, Sociology, and Speech.

Three-hour elective courses taken in lieu of Advanced ROTC will be chosen from the following: Art, Economics, English, History, Music, Philosophy, Religion, and Sociology.

Seminars will be chosen from the following list:

AR 558 Seminar in Contemporary Concepts....5
AR 559 Seminar in Historical Problems....5
AR 560 The Architect and Society....2
AR 561 Seminar in Urban Design....2

Honors Program in Architecture

Beginning in the fourth year of the curriculum in Architecture, superior students capable of independent study may be permitted on recommendation of the Committee on Honors Program to pursue an approved sequence of study designed to develop a field of concentration. Following nomination by the Committee, each student shall submit a plan of study for approval before commencing the work. The Program shall comprise a total of 20 hours of credit in the chosen area of study, of which at least 5 hours shall be spent in independent study directed by the Committee. At least 15 hours of normally required elective credit shall be planned as related courses. Appropriate extra assignments in these courses shall be arranged by the Committee for students enrolled and a high level of performance shall be maintained in all work. At the option of the Committee a comprehensive examination appropriate to the study may be required.

Upon successful completion of the work the candidate shall be awarded the degree Bachelor of Architecture (Honors Program). A total of 281 hours is required for graduation under this Program.

Interior Design

The curriculum in Interior Design seeks to prepare the student to take his place as a professional specialist in the design of interior space. As such, he expects to assume a responsible role among those who shape physical environment. His primary interest in the development of interiors is concerned with the social, historical and technical implications of those aspects of space, surface and material which distinguish his work. His training will enable him to develop a practice as a private consultant, as a designer of furniture and textiles, and as a valuable associate of the architectural design team.

Curriculum in Interior Design (ID)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AR 101	Basic Design 6	AR 102	Basic Design 6	AR 103	Basic Design 6
EH 101	English Comp. 5	EH 102	English Comp. 5	EH 108	Classical Literature 5
FL 121	Elem. French or	FL 122	Elem. French or	FL 221	Intermediate French or
FL 241	Elem. Italian 5	FL 242	Elem. Italian 5	FL 341	Intermediate Italian 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

AR 201	Arch. Design 4	AR 206	Interior Design 4	AR 207	Interior Design 4
AR 271	Descriptive Draw. ..2	AR 272	Descriptive Draw. ..2	AR 273	Descriptive Draw. ..2
AR 361	History & Theory of Architecture 3	AR 362	History & Theory of Architecture 3	AR 363	History & Theory of Architecture 3
AR 215	Elements of I.D. 2	AR 216	Elements of I.D. 2	EH 208	Lit. of Western World 3
TT 220	Weaving & Design 5	AR 233	Materials & Constr. 5	PG 211	Gen. Psychology 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

AR 305	Interior Design 5	AR 306	Interior Design 5	AR 307	Interior Design 5
AR 461	History & Theory of Architecture 3	AR 462	History & Theory of Architecture 3	AR 463	History & Theory of Architecture 3
AR 365	Period Interiors 2	AR 366	Period Interiors 2	AR 367	Contemp. Interiors ..2
EC 200	Gen. Economics 5	EC 331	Marketing 5	SY 201	Intr. to Sociology ..5
	General Elective 3		General Elective 3		General Elective 3

Summer Requirement: AR 390 Field Project (2 cr.) pre-requisite to AR 406.

FOURTH YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AR 405	Interior Design 5	AR 406	Interior Design 5	AR 407	Interior Design 5
AR 441	Professional Practice 2	AR 422	Professional Practice 2	AR 435	Methods of I.D. 5
	Group Elective 5	AT 338	Art History 5	AR 432	Materials & Finishes 2
	Group Elective 5	AR 408	Int. Des. Research ..2		General Elective 3
			General Elective 3		

Total—214 quarter hours

Five-hour elective courses will be chosen from the group electives in Economics, English, Foreign Languages, History, Philosophy, Psychology, Sociology, and Speech.

During the third and fourth years adjustment will be made for those students taking advanced ROTC.

GROUP ELECTIVES

For students in Architecture and Interior Design

AR 559 Seminar in Historic Problems
AT 325 Oil Painting
BT 521-2-3 Advanced Structures I-II-III
EC 305 Geography of North America
EC 341 Business Law
EC 357 Economic History of Europe
EC 358 Economic History of the U.S.
EC 452 Comparative Economic Systems
EC 460 Economic Development of the South
EH 253-4 Literature in English
EH 352 Contemporary Fiction
EH 353 Contemporary Drama
EH 357-8 Survey of American Literature
EH 361 History of the English Drama
EH 390 Advanced Composition
EH 410 European Literature
EH 450 Contemporary Poetry
FL 121-2-221 French
FL 131-2-231 Spanish
FL 241-2-341 Italian
FL 151-2-251 German
HY 209 National Government
HY 311 Medieval History
HY 312 Modern European History
HY 404 Recent United States History
HY 407 Political Science
PA 307 Scientific Reasoning
PA 320 Formal Logic
PA 325 Aesthetics
PA 410 Ancient and Medieval Philosophy
PA 420 Modern Philosophy
PA 430 Contemporary Philosophy
PG 330 Social Psychology
SP 229 Voice and Diction
SP 231 Essentials of Public Speaking
SP 253 Group Leadership
SP 273 Group Discussion
SY 201 Introductory Sociology
SY 301 Sociology of the Family
SY 401 Population Problems
SY 403 Regional Sociology
SY 405 Urban Sociology

Department of Building Technology

The Department of Building Technology offers courses concerned with the structural design of buildings, the design of mechanical and other equipment for buildings, the practical application of building materials, the estimation of building costs, methods of construction and field erection procedures. These courses lead to the degree of Bachelor of Building Construction.

Curriculum in Building Construction (BC)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
BT 104	Intr. to Building 5	BT 105	Drawing & Proj. 5	BT 106	Matls. & Constr. 5
EH 101	English Comp. 5	EH 102	English Comp. 5	MH 161	Anal. Geom. & Cal. 5
MH 111	Intr. College Math. 5	MH 112	Intr. College Math. 5	PS 205	Physics 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

EC 200	Gen. Economics 5	EC 213	Engr. Accounting 5	BT 220	Mech. of Structures 5
MH 262	Anal. Geom. & Cal. 5	MH 263	Anal. Geom. & Cal. 5	EC 214	Cost Control 5
PS 206	Physics 5	IL 101	Woodworking 1	IL 102	Welding Science
IL 104	Sheet Metal		Elective 5		& Application 1
	Des. & Fab. 1	MS	Military Training 1		Elective 5
MS	Military Training 1	PE	Physical Education ..1	MS	Military Training 1
PE	Physical Education ..1			PE	Physical Education ..1

THIRD YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
BT 311 Structures I 3	BT 312 Structures II 3	BT 313 Structures III 3
BT 367 History of Bldg. I ..3	BT 368 Hist. of Bldg. II 3	BT 369 Hist. of Bldg. III 3
CE 201 Surveying 5	PA 307 Scientific Reasoning 5	EC 445 Indus. Relations or
Group Elective 5	Group Elective 5	EC 350 Labor Problems 5
Adv. ROTC or	Adv. ROTC or	Group Elective 5
Elective 3	Elective 3	Adv. ROTC or
		Elective 3

FOURTH YEAR

BT 433 Constr. Methods & Estimating 5	BT 422 Constr. Prob. II 5	BT 490 Building Const. Thesis 7
BT 421 Constr. Prob. I 5	BT 412 Structures V 3	BT 453 Bldg. Equipment II 3
BT 411 Structures IV 3	BT 452 Bldg. Equipment I ..3	Technical Elective ..5
Elective 3	Group Elective 5	Adv. ROTC or
Adv. ROTC or	Adv. ROTC or	Elective 3
Elective 3	Elective 3	

Total—218 quarter hours

Note: Five-hour elective courses will be chosen from the group electives in Economics, English, Foreign Languages, History, Psychology, Sociology, Speech, and Town Planning.

Note: Three-hour elective courses taken in lieu of Advanced ROTC will be chosen from the following: Art, Economics, English, History, Music, Philosophy, and Religion.

GROUP ELECTIVES

For students in Building Construction

BT 521-2-3 Advanced Structures I-II-III
EC 305 Geography of North America
EC 323 Real Estate
EC 341 Business Law
EC 345 Statistics
EC 357 Economic History of Europe
EC 358 Economic History of the U.S.
EC 402 American Industries
EC 442 Personnel Management
EC 452 Comparative Economic Systems
EC 460 Economic Development of the South
EC 475 Economics of Public Utilities
EH 253-4 Literature in English
EH 352 Contemporary Fiction
EH 353 Contemporary Drama
EH 357-8 Survey of American Literature
EH 361 History of the English Drama
EH 363-4 Eighteenth Century English Literature
EH 371 The American Short Story
EH 372 The American Novel
EH 390 Advanced Composition
EH 410 European Literature
EH 450 Contemporary Poetry
EH 451-2 Shakespeare
EH 457 Victorian Literature
EH 459 Poetry and Prose of the Elizabethan Period
EH 481-2 English Novel
EH 491 American Poetry
FL 121-2-221 French
FL 131-2-231 Spanish
FL 241-2-341 Italian
FL 151-2-251 German
HY 206 United States Government
HY 209 National Government
HY 311 Medieval History
HY 312 Modern European History
HY 313 Recent European History
HY 314 United States Colonial History
HY 404 Recent United States History
HY 406 The Civil War and Reconstruction
HY 408 United States Political Parties
HY 451 The Far East
HY 452 History of Latin America
HY 460 Great Leaders of History
HY 482 History of the South
PA 325 Aesthetics
PA 420 Modern Philosophy
PG 211 General Psychology
PG 330 Social Psychology
SY 201 Introductory Sociology
SP 231 Essentials of Public Speaking
SY 301 Sociology of the Family
SY 304 Race and Culture
SY 401 Population Problems
SY 402 Social Theory
SY 403 Regional Sociology
SY 405 Urban Sociology
SY 408 Industrial Sociology

Students who desire to take a second degree in Civil Engineering after graduation in Building Construction can do so in a minimum of four quarters, by substituting in the Building Construction curriculum Physics 201, 202, 203 in place of Physics 205, 206; and by taking Surveying 203 and Chemistry 103-103L, and 104-104L. By using electives and by carrying a one or two hour overload in some quarters, these substitutions and additions need not prolong the completion of the requirements for the Building Construction degree beyond the normal length of twelve quarters.

The additional training to be obtained from this extra work in Civil Engineering will provide strong supplementary skills for any member of the building industry.

Master of Building Construction

Students holding the degree of Bachelor of Building Construction are eligible to apply to the Dean of the Graduate School for admission to the graduate course leading to the degree of Master of Building Construction. The candidate must complete satisfactorily the following curriculum, or its equivalent, as approved by the Dean of the Graduate School, totaling 60 quarter hours.

CE 407 Municipal Engineering	5
EC 434 Purchasing	5
EC 450 Job Evaluation and Incentive Systems	5
BT 605-6-7 Graduate Research in Building	15
BT 621-2-3 Graduate Construction Design	15
CE 630 Advanced Stress Analysis	5
BT 699 Research and Thesis	10

Department of Art

The Department of Art is primarily concerned with professional education in Art. It is directed toward training students who wish to become practical professional artists and designers. To this end a program of studio courses is combined with studies of the theoretical functions and historical background of the visual arts. Courses in general education promote in the student a comprehension of his responsibilities to the society and culture in which he lives. Two curricula are offered: Visual Arts and Industrial Design, leading to the degrees of Bachelor of Visual Arts and Bachelor of Industrial Design respectively.

Students in the School of Education may elect a minor, major, or special major in Art (See page 97). Students in the School of Science and Literature may elect a minor (15 hours) or a double minor (30 hours) in Art.

The Department of Art is a member of the National Association of Schools of Art and the College Art Association.

Visual Arts

The program in Visual Arts gives fundamental training in the techniques of visual communication. Following a two-year course in basic art principles, the student, with faculty approval, enters Visual Design. A core curriculum emphasizes the techniques of drawing for reproduction, lettering and typographical layout. The student is encouraged to think creatively within the limits of materials and processes. Beginning in the third year, the student may develop special interests in painting, printmaking, sculpture, illustration or fashion through a series of design electives. Courses in economics, sociology, psychology and other academic subjects further an understanding of the function of design in commerce and industry. This breadth of background increases the possibility of future advancement to administrative levels.

Many graduates of this option find employment in advertising agencies, printing and engraving plants, or packaging and display firms. Others freelance or work with publications and in government agencies. A number of graduates find the Visual Arts course an excellent background for promotional marketing and designing for television.

Curriculum in Visual Arts (VA)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AT 105	Drawing I 5	AT 106	Drawing II 5	AT 107	Drawing III 5
AT 181	Design Fundamentals I 5	AT 113	Perspective 3	AT 182	Design Fundamentals II 5
EH 101	English Comp. 5	EG 102	Engin. Drawing I ..2	HY 107	American History ..5
MS	Military Training 1	EH 102	English Comp. 5	MS	Military Training 1
PE	Physical Education ..1	MS	Military Training 1	PE	Physical Education ..1
		PE	Physical Education ..1		

SECOND YEAR

AT 227	Sculpture I 5	AT 222	Painting I 5	AT 224	Painting II 5
AT 211	Lettering 5	AT 205	Figure Drawing I ..5	AT 215	Artistic Anatomy 5
EH 253	Lit. in English 5	AT 212	Graphic Processes ..5	PG 211	Psychology 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

AT 381	Visual Design I 5	AT 382	Visual Design II 5	AT 383	Visual Design III 5
AT 307	Figure Drawing II 5	AT 355	Illustration I 5	EC 200	General Economics ..5
AT 338	Art History I 5	AT 339	Art History II 5		Design Elective 5
	Elective 3		Elective 3		Elective 3

FOURTH YEAR

AT 481	Visual Design IV ..5	AT 482	Visual Design V 5	AT 496	Thesis 5
	Design Elective 5		Design Elective 5		Elective 5
EH	Adv. English Elec. 5	EC 331	Marketing Prin. 5		Elective 5
	Elective 3		Elective 3		Elective 3

Total—210 quarter hours

DESIGN ELECTIVES

AT 361	Fashion I 5	AT 405	Printmaking II 5	AT 422	Painting V 5
AT 462	Fashion II 5	AT 322	Painting III 5	AT 327	Sculpture II 5
AT 305	Printmaking I 5	AT 324	Painting IV 5	AT 456	Illustration II 5

Industrial Design

In recent years, progressive manufacturers have discovered the indispensable advantage of marketing products that have been designed for maximum utility and attractiveness. This need has called forth the entirely new profession of Industrial Design. The Industrial Designer works with manufacturers as a specialist to produce a design which is fully developed before production starts, which takes advantage of the best in industrial materials and processes.

In all types of manufactured articles, from fountain pens to automobiles, the touch of the modern Industrial Designer is constantly seen today. Because these products are better adapted to their intended use and at the same time display attractive and expressive forms, the Industrial Designer through his imaginative and creative work makes a valuable contribution to the daily life of almost every citizen.

Curriculum in Industrial Design (IN)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AT 105	Drawing I 5	AT 181	Design Fundamentals I 5	AT 182	Design Fundamentals II 5
EH 101	English Comp. 5	AT 113	Perspective 3	AT 106	Drawing II 5
MH 111	Intr. College Math. 5	EG 102	Engin. Drawing I ..2	MH 112	Intr. College Math. 5
MS	Military Training 1	EH 102	English Comp. 5	MS	Military Training 1
PE	Physical Education ..1	MS	Military Training 1	PE	Physical Education ..1
		PE	Physical Education ..1		

SECOND YEAR

AR 215	Elem. of Inter. Des. 2	AT 271	Intr. to Industrial Design 5	AT 381	Visual Design 5
AT 227	Sculpture I 5	AT 222	Painting I 5	EG 105	Engin. Drawing II ..2
AT 216	Materials and Proc. 5	PS 204	Physics 5	EG 204	Kinematics 3
EG 104	Desc. Geometry 2	MS	Military Training 1	HY 208	World History 5
IL	Shop Elective 1	PE	Physical Education ..1	MS	Military Training 1
MS	Military Training 1			PE	Physical Education ..1
PE	Physical Education ..1				

THIRD YEAR

AT 371	Indus. Design I 5	AT 372	Indus. Design II 5	AT 212	Graphic Processes ..5
AT 211	Lettering 5	AT 338	Art History I 5	AT 373	Indus. Design III 5
PG 211	Psychology 5	EC 200	Gen. Economics 5	SP 231	Ess. Pub. Speaking ..5
	Elective 3		Elective 3		Elective 3

FOURTH YEAR

AT 339	Art History II 5	AT 472	Indus. Design V 5	AT 497	Thesis 5
AT 471	Indus. Design IV ..5	AT	Adv. Art Elective ..5	AT	Adv. Art Elective ..5
EC 331	Marketing Prin. 5	PA 325	Aesthetics 5		Elective 5
	Elective 3		Elective 3		Elective 3

Total—210 quarter hours

Graduate Work in Art

Students who hold the degree of Bachelor of Visual Arts, Fine Arts, or a similar degree, are eligible to apply to the Dean of the Graduate School for admission to the graduate course leading to the degree Master of Fine Arts. For details examine the Bulletin of the Graduate School.

Department of Dramatic Arts

The courses in Dramatic Arts offer to those interested in the various aspects of the theatre a well-balanced combination of theoretical study and practical work in play production, acting, and stagecraft. Class work is closely associated with the university dramatic group, the Auburn Players. Students in all courses with laboratory are expected to participate in the production of plays. Much attention is given to those who intend to direct dramatic work in schools and little theatres.

For the layman who desires an appreciative understanding of the theatre, the courses, Dramatic Production, Acting and Stage Techniques, Directing, Acting and Makeup, Stage Mechanics, Dramatic Theory, Drama Appreciation I and II, and the general course in theatre work, Dramatics, may be elected. Students from all schools are welcomed at the tryouts of the Auburn Players. For the student wishing to major in Dramatic Arts a full program of courses is offered leading to the Bachelor of Arts degree, with options in Directing and Stagecraft. Dramatic Arts may be taken as a major or minor in the School of Education (See page 98) or as a minor in the School of Science and Literature (See page 139). Attendance at student convocations each Tuesday is compulsory.

Curriculum in Dramatic Arts (DR)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
DR 101	Dram. Production ..5	DR 102	Acting and Stage Techniques 5	DR 201	Directing 5
EH 101	English Comp. 5	EH 102	English Comp. 5	*FL 221	Interm. French 5
*FL 121	Elem. French 5	*FL 122	Elem. French 5	PG 211	Psychology 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

DR 202	Acting & Make-Up ..5	DR 203	Stage Mechanics 5	DR 204	Dramatic Theory 5
EH 253	Lit. in English 5	EH 254	Lit. in English 5	HY 208	World History 5
SP 229	Voice & Diction** ..5	HY 207	World History 5	SY 201	Intr. Sociology 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

DR 310	World Theatre 5	AT 339	Art History II 5	DR 312	World Theatre 5
EH 410	European Lit. 5	DR 311	World Theatre 5	EH 452	Shakespeare 5
MU 373	Appre. of Music 3	EH 451	Shakespeare 5	MU	Music elective 3
AT 338	Art History I 5	MU 376	Music for Ballet and Theatre 3		Elective 5

FOURTH YEAR

DR 401	Adv. Directing 5	DR 402	Adv. Directing 5	DR 403	Adv. Directing 5
DR 413	Twentieth Century Theatre 5		Elective 5		Elective 5
	Elective 5		Elective 5		Elective 5
	General Elective 3		General Elective 3		General Elective 3

Total—210 quarter hours

* Another language may be substituted for French with the approval of the Department Head. If a student has already had some foreign language, he would normally be expected to continue with it until a reading knowledge is gained.

** With this single exception, the first two years of work will be the same for all students in Dramatic Arts. In the Stagecraft Option, a substitution will be made for SP 229.

For Stagecraft Majors, DR 407-8-9 would replace DR 401-2-3.

Department of Music

The Department of Music provides instruction and performing experience to students interested in developing their talents in music. The courses of study provided by the Department have been created to present a balance between creative skills and academic studies, allowing at the same time a certain flexibility to meet individual requirements.

The Department of Music offers to the Music Major a four-year curriculum leading to the degree Bachelor of Music, with majors in (A) Applied Music or (B) Theory and Composition. These programs provide preparation for the professional field of performance and for private or college teaching of applied music, theory, and composition. They also provide training for church organists and choir directors.

For the student wishing to major in Music History and Literature, the Department of Music offers a program of studies leading to the Bachelor of Arts degree. This degree is a cultural, not a professional degree.

The Department of Music offers a group of general elective courses of interest and value to all University students that they may acquaint themselves with music as one aspect of a liberal culture either as appreciative listeners or as trained participants. Courses in Applied Music consist of individual instruction in voice and in the playing of the piano, violin, organ, 'cello, and all woodwind and brass instruments. Courses in ensemble playing, band, orchestra, glee clubs, choir, and opera workshop are also offered to students in all curricula.

Professional Curriculum in Music (MU)

(A) Applied Music Major

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	HY 107	United States Hist. 5
MU 131	Music Theory I 3	MU 132	Music Theory II 3	MU 133	Music Theory III ..3
MU 151	Survey of Mu. Lit. ..1	MU 152	Survey of Mu. Lit. ..1	MU 153	Survey of Mu. Lit. ..1
MU	Major Instrument 3	MU	Major Instrument 3	MU	Major Instrument 3
MU	*Minor Instrument 1	MU	*Minor Instrument 1	MU	*Minor Instrument 1
MU	Perf. Group 1	MU	Perf. Group 1	MU	Perf. Group 1
MU	Ensemble 1	MU	Ensemble 1	MU	Ensemble 1
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

EH 253	English Lit. 5	EH 254	English Lit. 5	HY 208	World History 5
MU 231	Music Theory IV 3	MU 232	Music Theory V 3	MU 233	Music Theory VI 3
MU 251	Survey of Mu. Lit. ..1	MU 252	Survey of Mu. Lit. ..1	MU 253	Survey of Mu. Lit. ..1
MU	Major Instrument 3	MU	Major Instrument 3	MU	Major Instrument 3
MU	Minor Instrument 1	MU	Minor Instrument 1	MU	Minor Instrument 1
MU	Perf. Group 1	MU	Perf. Group 1	MU	Perf. Group 1
MU	Ensemble 1	MU	Ensemble 1	MU	Ensemble 1
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

FL	Foreign Language ..5	FL	Foreign Language ..5	FL	Foreign Language ..5
MU 334	Counterpoint I 3	MU 335	Counterpoint II 3	MU 336	Counterpoint III 3
MU 351	Music History I 3	MU 352	Music History II 3	MU 353	Music History III 3
MU	Major Instrument 3	MU	Major Instrument 3	MU	Major Instrument 3
MU	Ensemble 1	MU	Ensemble 1	MU	Ensemble 1
	Elective 3		Elective 3		Elective 3

FOURTH YEAR

MU 337	Arranging 3	MU 432	Music Analysis 3	SY 201	Intr. Sociology 5
MU 431	Music Analysis 3	EC 200	Gen. Economics 5	MU 361	Conducting 3
MU	Major Instrument 3	MU	Major Instrument 3	MU	Applied Lit. 3
MU	Ensemble 1	MU	Ensemble 1	MU	Major Instrument 3
	Elective 5	MU	Applied Pedagogy ..3	MU	Ensemble 1
	Elective 3		Elective 3		Elective 3

* Minor instrument must be piano for non-piano majors.

Total—210 quarter hours

(B) Theory and Composition Major

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	HY 107	United States Hist. 5
MU 131	Music Theory I 3	MU 132	Music Theory II 3	MU 133	Music Theory III 3
MU 151	Survey of Mu. Lit. ..1	MU 152	Survey of Mu. Lit. ..1	MU 153	Survey of Mu. Lit. ..1
MU 181	Applied Piano 2	MU 182	Applied Piano 2	MU 183	Applied Piano 2
MU 116	Woodwind Class 1	MU 117	Woodwind Class 1	MU 118	Woodwind Class 1
MU 110	String Class 1	MU 111	String Class 1	MU 112	String Class 1
MU	Perf. Group 1	MU	Perf. Group 1	MU	Perf. Group 1
MU	Ensemble 1	MU	Ensemble 1	MU	Ensemble 1
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

EH 253	English Lit. 5	EH 254	English Lit. 5	HY 208	World History 5
MU 231	Music Theory IV 3	MU 232	Music Theory V 3	MU 233	Music Theory VI 3
MU 251	Survey of Mu. Lit. ..1	MU 252	Survey of Mu. Lit. ..1	MU 253	Survey of Mu. Lit. ..1
MU 107	Voice Class 1	MU 108	Voice Class 1	MU 119	Percussion Class 1
MU 113	Brass Class 1	MU 114	Brass Class 1	MU 115	Brass Class 1
MU 281	Applied Piano 2	MU 282	Applied Piano 2	MU 283	Applied Piano 2
MU	Perf. Group 1	MU	Perf. Group 1	MU	Perf. Group 1
MU	Ensemble 1	MU	Ensemble 1	MU	Ensemble 1
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
FL	Foreign Language ..5	FL	Foreign Language ..5	FL	Foreign Language ..5
MU 334	Counterpoint I 3	MU 335	Counterpoint II 3	MU 336	Counterpoint III 3
MU 351	Music History I 3	MU 352	Music History II 3	MU 353	Music History III 3
MU 331	Modern Harmony 3	MU 454	Instrumental Lit. 3	MU 361	Conducting 3
MU 381	Applied Piano 1	MU 382	Applied Piano 1	MU 383	Applied Piano 1
	Elective 3		Elective 3		Elective 3

FOURTH YEAR

MU 431	Music Analysis 3	MU 432	Music Analysis 3	SY 201	Intr. Sociology 5
MU 434	Composition I 3	MU 435	Composition II 3	MU 436	Composition III 3
MU 437	Orchestration I 3	MU 438	Orchestration II 3	MU 439	Orchestration III 3
MU 481	Applied Piano 1	MU 482	Applied Piano 1	MU 483	Applied Piano 1
	Elective 5	EC 200	Gen. Economics 5	MU 445	Theory Pedagogy 3
	Elective 3		Elective 3		Elective 3

Total—210 quarter hours

Supplementary Requirements for the Professional Degree — Bachelor of Music

1. Students concentrating in Applied Music are required to present a junior recital near the close of the third year, and a senior graduation recital during the last year of study.

2. Students concentrating in Music Theory and Composition are required to present an original composition in small form near the close of the third year and a composition in large form during the last year of study.

3. Attendance and performance at student convocations each Wednesday are compulsory.

Curriculum in Music (MU)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	FL	Foreign Language ..5
FL	Foreign Language ..5	FL	Foreign Language ..5	HY 107	United States Hist. 5
MU 131	Music Theory I 3	MU 132	Music Theory II 3	MU 133	Music Theory III 3
MU 151	Survey of Mu. Lit. ..1	MU 152	Survey of Mu. Lit. ..1	MU 153	Survey of Mu. Lit. ..1
MU	Applied Music 2	MU	Applied Music 2	MU	Applied Music 2
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SECOND YEAR

EH 253	English Lit. 5	EH 254	English Lit. 5	EC 200	Gen. Economics 5
HY 207	World History 5	HY 208	World History 5	SY 201	Intr. Sociology 5
MU 231	Music Theory IV 3	MU 232	Music Theory V 3	MU 233	Music Theory VI 3
MU 251	Survey of Mu. Lit. ..1	MU 252	Survey of Mu. Lit. ..1	MU 253	Survey of Mu. Lit. ..1
MU	Applied Music 2	MU	Applied Music 2	MU	Applied Music 2
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

THIRD YEAR

MU 351	Music History I 3	MU 352	Music History II 3	MU 353	Music History III 3
MU 334	Counterpoint I 3	**	Science or Math. 5	MU 451	Music Literature 3
PG 211	Gen. Psychology 5	*	Minor 5	*	Minor 5
*	Minor 5		Elective 5		Elective 5

FOURTH YEAR

MU 365	Arranging 3	MU 432	Music Analysis 3	AT 331	His. Ptg. & Sculp. ..5
MU 431	Analysis 3	MU 453	Music Literature 3	MU 361	Conducting 3
MU 452	Music Literature 3	*	Minor 5	MU 454	Music Literature 3
*	Minor 5		Electives 6	*	Minor 5
	Elective 3				Elective 2

Total—210 quarter hours

* Two minors of 15 quarter hours each will be elected from approved courses in foreign languages and history. Except for foreign languages, subjects must be numbered 200 or above.
** One of the following courses must be selected: PS 204, BY 201, ZY 101, MH 107, MH 181.

Supplementary Requirements for Bachelor of Arts Degree

1. The music courses for the degree are divided into Lower and Upper Divisions. Majors must complete (a) 36 quarter hours of music in the Lower Division (18 hours of theory, 12 hours of applied music, and 6 hours of music literature); (b) a minimum of 36 hours of music in the Upper Division.
2. A comprehensive examination will be given at the end of the sophomore year which must be passed before the student proceeds to the Upper Division music courses.
3. Students concentrating in Music History and Literature are required to write a thesis during the last year of study.
4. History and Literature majors must complete sophomore NASM applied music standards. To meet these requirements additional applied music beyond the second year may be required.
5. Participation in the work of music performance groups is required each quarter with or without credit.
6. Attendance and performances at student convocations each Wednesday are compulsory.

Music Education

For the student wishing to become a teacher of music, the Department of Music offers a full program of studies in conjunction with the School of Education leading toward certification by the State Department of Education.

Program for Minor in Music

School of Education, see page 99.

Program for Major in Music

School of Education, see page 99.

Program for Composite Major-Minor in Music

School of Education, see page 99.

Supplementary Requirements for Music Majors and Minors

1. Music Majors and Minors are required to participate in the work of music performance groups (concert choir, band, or orchestra).
2. Attendance and performances at student convocations each Wednesday are compulsory for Music Majors.

Music Organizations

The several musical organizations, sponsored by the University and directed by the Department of Music, provide excellent training in group music. See index under "Music Organizations." These activities, which are open to students of the University, may be taken without credit, or offered as general elective credit.

Graduate Work in Music

Students who hold a baccalaureate degree in Education with a Major in Music are eligible to apply to the Dean of the Graduate School for admission to the graduate courses leading to the degrees Master of Science and Master of Education with Major in Music. The candidate must complete satisfactorily the following curriculum totaling 45 quarter hours.

Education and Foundation Courses.....15
Music and Music Education Courses.....30

School of Chemistry

CHARLES RICHARD SAUNDERS, *Dean*

THE SCHOOL OF CHEMISTRY offers four-year curricula leading to the degrees of Bachelor of Science in Chemistry, Chemical Engineering, and Laboratory Technology, and advanced work leading to the degrees Master of Science in Chemistry, and Chemical Engineering and to the degree Doctor of Philosophy in Chemistry. The administrative offices, the Emerson R. Miller Library, the auditorium, and the departments of chemistry and laboratory technology are located in the Ross Chemical Laboratory. The department of chemical engineering occupies approximately one-fourth of the Wilmore Engineering Laboratory. This laboratory is conveniently located with respect to the Ross Chemical Laboratory and provides modern and adequate facilities.

Department of Chemistry

The curriculum in chemistry meets the standards of the accrediting committee of the American Chemical Society. It affords preparation and training for students desiring to equip themselves for work in both pure and applied chemistry.

The curriculum offers training in the fundamentals of the science together with advanced courses in chemistry and physics. General electives are selected from fields especially for their cultural value. All electives must be approved by the dean.

Mathematics 160, 111 or 107 must be satisfactorily completed before, or taken concurrently with, General Chemistry 103 or 111.

Curriculum in Chemistry (CH)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	General Chemistry ..5	CH 112	General Chemistry ..5	CH 113	General Chemistry ..5
EH 101	English Comp. 5	EH 102	English Comp. 5	HY 107	United States Hist. 5
*MH 160	Intr. College Math. 5	MH 161	Anal. Geometry and Calculus 5	MH 262	Analytic Geometry & Calculus 5
**LY 101	Library Science ..1				
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SOPHOMORE YEAR

CH 204	Analytical Chem. 5	CH 205	Analytical Chem. 5	CH 303	Organic Chemistry ..5
MH 263	Analytic Geometry & Calculus 5	MH 264	Analytic Geometry & Calculus 5	MH 361	Differential Equa. ..5
				PS 203	Physics-Elec. & Magnetism 5
PS 201	Physics-Mechanics ..5	PS 202	Physics-Heat, Sound & Light 5		
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

CH 304	Organic Chemistry 5	CH 305	Organic Chemistry ..5	CH 409	Physical Chemistry ..5
CH 407	Physical Chemistry ..5	CH 408	Physical Chemistry ..5	FL 251	Intermed. German ..5
FL 151	Elem. German 5	FL 152	Elem. German 5	PS 305	Modern Physics 5
	Humanistic Elective 3		Humanistic Elective 3		Humanistic Elective 3

* Students not qualified to take MH 160 are required to take MH 111-112. Only five (5) of these hours will be acceptable towards graduation in lieu of MH 160.

** LY 101 Library Science may be scheduled in any quarter of the freshman year.

SENIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 404 Organic Analysis (Qualitative) 5	CH 411 Intermediate Inorganic Chemistry 5	CH 413 Anal. Chemistry 5
CH 410 Interm. Inorganic Chemistry 5	CH 412 Chemical Thermodynamics 5	PS 304 Spectroscopy 5
Human. Electives ..8	EH 390 Adv. Composition ..5	Human. Electives ..8
	Humanistic Elective 3	

Total—211 quarter hours

Women students will take Hygiene in the freshman year and Current Events in the sophomore year in lieu of Military Training.

Advanced military training may be substituted for the three hour humanistic electives in the junior and senior years. Students will be certified to the American Chemical Society as "Certified Graduates" when they have made up the electives for which advanced military training was substituted.

RECOMMENDED FIVE HOUR HUMANISTIC ELECTIVES

HY 206 United States Government 5	SP 231 Public Speaking 5
HY 210 State Government 5	EH 253 Literature in English 5

The following alternative curriculum may be selected by those students interested in the biological sciences.

Alternate Curriculum in Chemistry (CH)

(BIOCHEMISTRY OPTION)

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 111 General Chemistry ..5	CH 112 General Chemistry ..5	CH 113 General Chemistry ..5
EH 101 English Comp. 5	EH 102 English Comp. 5	MH 262 Analytic Geometry & Calculus 5
*MH 160 Intr. College Math. 5	MH 161 Analytic Geometry & Calculus 5	ZY 101 General Zoology 5
**LY 101 Library Science ..1	MS Military Training 1	MS Military Training 1
MS Military Training 1	PE Physical Education ..1	PE Physical Education ..1
PE Physical Education ..1		

SOPHOMORE YEAR

CH 204 Analytical Chem. 5	CH 205 Analytical Chem. 5	CH 303 Organic Chemistry ..5
MH 263 Analytic Geometry & Calculus 5	MH 264 Analytic Geometry & Calculus 5	PS 202 Physics-Heat, Sound & Light 5
ZY 102 General Zoology 5	PS 201 Physics Mechanics ..5	ZY 301 Compar. Anatomy ..5
MS Military Training 1	MS Military Training 1	MS Military Training 1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

JUNIOR YEAR

CH 304 Organic Chemistry ..5	CH 305 Organic Chemistry ..5	CH 409 Physical Chemistry 5
CH 407 Physical Chemistry 5	CH 408 Physical Chemistry 5	EH 390 Adv. Composition ..5
PS 203 Physics-Elec. & Magnetism 5	ZY 424 Animal Physiology 5	VM 200 Gen. Microbiology ..5
Humanistic Elective 3	Humanistic Elective 3	Humanistic Elective 3

SENIOR YEAR

CH 418 Biochemistry 5	CH 419 Biochemistry 5	CH 420 Biochemistry 5
FL 151 Elem. German 5	FL 152 Elem. German 5	FL 251 Interm. German 5
Human. Electives ..8	Human. Electives ..8	Human. Electives ..8

Total—211 quarter hours

Note: Advanced military training may be substituted for the three hour humanistic electives in the junior and senior years.

* Students not qualified to take MH 160 are required to take MH 111-112. Only five (5) of these hours will be acceptable towards graduation in lieu of MH 160.

** LY 101 Library Science may be scheduled in any quarter of the freshman year.

RECOMMENDED FIVE HOUR HUMANISTIC ELECTIVES

HY 107 United States History 5	SP 231 Public Speaking 5
HY 206 United States Government 5	EH 253 Literature in English 5
HY 210 State Government 5	

Department of Chemical Engineering

The rapid growth of the chemical and metallurgical industries, particularly in the South, provides exceptional opportunities for students taking chemical engineering.

The work of the chemical engineer relates to the design, construction, and operation of plants for the production of numerous chemical and industrial products such as coke, cement, petroleum products, paper, synthetic rubber, synthetic fibers, ceramic products and glass.

The program leading to the bachelor's degree in chemical engineering consists almost entirely of broad scientific and engineering principles which have numerous applications in the chemical and related industries. Students who complete the requirements of the master's degree are qualified for better positions and often make more rapid progress than those with only the bachelor's degree.

The broad university training provided, when supplemented by professional experience, enables graduates to qualify for positions as engineers in production, research and development, sales engineering, plant design, and management. Chemical engineers recently are being employed in increasing numbers in nuclear engineering.

The curriculum in chemical engineering is offered under both the regular and the co-operative plan. See the Co-operative Education Program on page 110.

For admission to the chemical engineering curriculum, students registered in the Curriculum in Pre-Chemical Engineering must complete all prescribed courses in mathematics with an average of 1.0.

Curriculum in Pre-Chemical Engineering (PCN)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	General Chemistry ..5	CH 112	General Chemistry ..5	CH 113	General Chemistry ..5
EH 101	English Comp. 5	EH 102	English Comp. 5	HY 107	United States Hist. 5
MH 160	Intr. College Math. 5	MH 161	Analytic Geometry & Calculus 5	MH 262	Analytic Geometry & Calculus 5
EG 102	Eng. Drawing I 2	EG 104	Desc. Geometry 2	EG 105	Engr. Drawing II 2
*LY 101	Use of the Library ..1	MS	Military Training 1	MS	Military Training 1
MS	Military Training 1	PE	Physical Education ..1	PE	Physical Education ..1
PE	Physical Education ..1				

SECOND YEAR

CH 206	Quant. Analysis 5	MH 264	Analytic Geometry & Calculus 5	CH 303	Organic Chemistry ..5
MH 263	Analytic Geometry & Calculus 5	PS 202	Physics-Heat, Sound & Light 5	MH 460	Numerical Analysis 5 or
PS 201	Physics-Mechanics ..5	ME 205	Applied Mechanics ..5	MH 467	Mathematical Stat. 5
	Humanistic Elective 3		Humanistic Elective 3	PS 203	Physics-Elec. & Magnetism 5
MS	Military Training 1	MS	Military Training 1	CN 201	Chem. Engr. Fundamentals 3
PE	Physical Education ..1	PE	Physical Education ..1	MS	Military Training 1
				PE	Physical Education ..1

* LY 101 Library Science may be scheduled in any quarter of the freshman year.

Curriculum in Chemical Engineering (CN)

THIRD YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 304 Organic Chemistry ..5	CH 408 Physical Chemistry ..5	CN 326 Heat Transfer 5
CH 407 Physical Chemistry ..5	CN 324 Fluid Mechanics 4	CN 321 Chemical Process Industries 3
CN 300 Process Calculations 3	ME 306 Strength of Mat. 5	PS 305 Introduction to Modern Physics 5
MH 361 Diff. Equations I 5	Human. Electives ..6	SP 305 Public Speaking 3
ME 202 Materials of Engr. ..3		Humanistic Elective 5

FOURTH YEAR

CN 322 Organic Processes & Kinetics 3	CN 425 Kinetics 4	CN 484 Chem. Engr. Plant Design 4
CN 423 Unit Operations 5	CN 424 Mass Transfer 5	CN 490 Applied Thermo-Dynamics 5
CN 432 Instrumentation 4	CN 437 Process Engr. 4	EE 304 Electric Circuits 5
CN 426 Engr. Metallurgy 5	Human. Electives ..6	Human. Electives ..6
CN 430 Computer Principle 2		

Total—238 quarter hours

Six hours of technical electives, mathematics, or Advanced ROTC, may be substituted for SP 305 (3 hours) and ME 202 Materials of Engineering (3 hours).

SUGGESTED ELECTIVES IN HUMANISTIC-SOCIAL STUDIES

EH 108 Classical Literature 5
EH 350 Shakespeare's Greatest Plays 3
EH 365 Southern Literature 3
HY 208 World History 5
HY 322 U.S. in World Affairs 3
HY 460 Great Leaders 5
MU 373 Appreciation of Music 3
MU 374 Masterpieces of Music 3
PA 301 Introduction to Philosophy 3
PA 302 Introduction to Ethics 3
PA 307 Scientific Reasoning 5
PA 420 Modern Philosophy 5
PG 311 The Behavior of Man 3

Department of Laboratory Technology

This course is designed for men and women who wish to prepare themselves for clinical and other laboratory positions, such as public health, bacteriology, etc. With certain minor revisions, it can be used also to prepare for the study of medicine or dentistry.

The curriculum is planned for regular students to schedule courses during the Fall, Winter and Spring quarters only. Transfers or freshmen may enter the course at any quarter and use the Summer quarter to fit themselves to the regular program. All who complete the curriculum satisfactorily are eligible to receive the degree Bachelor of Science in Laboratory Technology.

The majority of the graduates enter the field of clinical medicine as medical technologists. They should plan to attain status as Registered Medical Technologists which is accomplished by interning for one year in an approved hospital and then passing the National Registry of Medical Technologists' written examination. If then desired, the additional Bachelor of Science degree in Medical Technology will be granted.

The four-year academic curriculum is recommended. An alternative plan, however, is available for those who plan to become medical technologists and who do not obtain the degree Bachelor of Science in Laboratory Technology. This plan leads to the degree Bachelor of Science in Medical Technology only. To qualify, the student must take the first nine quarters of the curriculum, intern for one year in a hospital approved by the American Society of Clinical Pathologists and by the Dean of the School of Chemistry, and pass the course work in the hospital and the National Registry examination.

Curriculum in Laboratory Technology (LT)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 103	General Chemistry ..4	CH 104	General Chemistry ..4	CH 105	General Chemistry ..3
CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1	CH 105L	Gen. Chem. Lab. ..2
MH 111	Intr. College Math. 5	EH 101	English Comp. 5	EH 102	English Comp. 5
ZY 101	General Zoology 5	ZY 102	General Zoology 5	MH 112	Intr. College Math. 5
PE 111	Hygiene 1	PE 112	Hygiene 1	PE 113	Hygiene 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
*LY 101	Library Science 1	LT 101	Orientation 1		

* LY 101 Library Science may be scheduled in any quarter of the freshman year.

SOPHOMORE YEAR

CH 206	Quant. Analysis 5	CH 207	Organic Chemistry ..5	CH 208	Organic Chemistry ..5
EH 141	Med. Vocabulary 5	PS 206	Physics-Elec., Sound & Light 5	VM 200	General Microbiology 5
PS 205	Physics-Mechanics and Heat 5	VM 220	Human Anatomy & Physiology 5	VM 221	Human Anatomy & Physiology 5
HY 205	Current Events 1	PE	Physical Education ..1	HY 205	Current Events 1
PE	Physical Education ..1			PE	Physical Education ..1

JUNIOR YEAR

CH 418	Biochemistry 5	CH 419	Biochemistry 5	CH 420	Biochemistry 5
LT 301	Hematology 5	LT 305	Serology 5	HY 107	United States Hist. 5
VM 204	Pathogenic Microbiology 5	ZY 303	Medical Parasitology 5	LT 401	Adv. Hematology 5
	Elective 3		Elective 3		Elective 3

SENIOR YEAR

EH 345	Business & Professional Writing 5	SP 231	Essentials of Public Speaking 5	LT 405	Adv. Serology 5
LT 421	Diagnostic Apparatus 5	PY 300	Public Health 5	LT 422	Hospital Lab. Practice 5
ZY 308	Micrology 5		Group Elective 5	ZY 409	Histology 5
LT 402	Seminar 3		Elective 3		Elective 3

Total—211 quarter hours

RECOMMENDED ELECTIVES

BY 101	General Botany 5	FL 151	Elementary German 5
BY 102	General Botany 5	FL 152	Elementary German 5
EC 102	Principles of Geography* 5	PG 211	General Psychology 5
EC 211	Introductory Accounting 5	SA 111	Business Typewriting 5
EC 212	Introductory Accounting 5	SY 201	Introductory Sociology 5
FL 121	Elementary French 5	SY 301	Sociology of the Family 5
FL 122	Elementary French 5	ZY 300	Genetics 5

* Not open to juniors or seniors.

School of Education

TRUMAN M. PIERCE, *Dean*

THE SCHOOL OF EDUCATION is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary teachers and school service personnel with the doctor's degree as the highest degree approved.

The School of Education provides professional preparation programs for service in the fields of curriculum and teaching; administration, supervision, and guidance; and psychology. Recognizing school service as a profession with various areas of activity, the School of Education provides training in a number of specialized curricula on both the undergraduate and graduate levels. Undergraduate programs lead to the degrees of Bachelor of Science in Education and Bachelor of Science in Agricultural Education and the Bachelor of Arts degree in Psychology. Programs administered by the Graduate School lead to the degrees of Master of Education, Master of Agricultural Education, the Master of Science, Specialist in Education, and Doctor of Education.

Programs and Degrees

Undergraduate

Agricultural Education. – The Department of Agricultural Education provides a program for the preparation of teachers of vocational agriculture and industrial arts. The vocational agriculture curriculum leads to the degree Bachelor of Science in Agricultural Education and the industrial arts curriculum leads to the degree Bachelor of Science in Education; these curricula include study in the liberal arts, specialization in the fields of agriculture or industrial arts, psychology, educational theory and practice, and laboratory experiences.

Elementary Education. – The Department of Elementary Education provides a program for the preparation of teachers for elementary schools. This curriculum leads to the degree of Bachelor of Science in Education and includes study in the liberal arts, psychology, educational theory and practice, laboratory experiences, and provision for concentration of study in one or more subject-matter fields.

Health, Physical Education and Recreation. – The Department of Health, Physical Education, and Recreation provides a program for the preparation of teachers of health and physical education. This curriculum leads to the degree of Bachelor of Science in Education and includes study in the liberal arts, psychology, educational theory and practice, laboratory experiences, and specialization in health and physical education.

Psychology. – The Department of Psychology has a liberal arts program which leads to the degree Bachelor of Arts. This curriculum prepares students for further study in psychology at the graduate level and serves also

as a liberal undergraduate education or as pre-professional preparation for medicine and the ministry.

Secondary Education. — The Department of Secondary Education provides a program for the preparation of teachers in secondary schools. This curriculum leads to the degree Bachelor of Science in Education and includes study in the liberal arts, specialization in one or more teaching fields, psychology, educational theory and practice, and laboratory experiences. Fields of specialization include Art, Business Education, Dramatic Arts, English, Foreign Languages, Health and Physical Education, Mathematics, Mental Retardation, Music, Science, School Library Service, Social Science, Speech, Speech Correction, and Vocational Home Economics Education.

Graduate

Graduate programs are offered through the Graduate School in administration, supervision, and guidance; agricultural education; elementary education; health and physical education; secondary education; and psychology. A graduate program is also available in school library service.

Fifth-year programs of study in these areas lead to the degrees Master of Science, Master of Education, and Master of Agricultural Education.

Sixth-year programs in curriculum and teaching, and in administration, supervision, and guidance lead to the degree of Specialist in Education.

A doctoral program leading to the degree of Doctor of Education is offered in the areas of curriculum and teaching; and in administration, supervision and guidance.

Programs of study leading to the respective graduate degrees provide opportunities for advanced study in professional education, psychology, and for concentration in appropriate subject-matter fields related to the professional objectives of graduate students.

For descriptions of graduate programs and degree requirements see Graduate School Bulletin.

Related Programs and Services

Teacher Certification Services

Programs in the School of Education are approved by the National Council for Accreditation of Teacher Education and the Alabama State Board of Education for certifying superintendents, supervisors, principals, guidance personnel, elementary and secondary teachers, and school librarians. Upon satisfactory completion of a prescribed course of study and upon recommendation of the Dean of the School of Education a professional certificate will be issued by the appropriate State Department of Education. Twenty-nine State Departments of Education now have reciprocal agreements for issuing certificates to graduates of institutions accredited by NCATE.

Students in other areas of the University may want to take courses in education and psychology for the purpose of acquiring knowledge and understanding regarding human growth and development, the history and purposes of education in America, and teaching as a profession. They are encouraged to take such courses, and are eligible to take all courses for which they satisfy prerequisites except the internship in student teaching.

Students who do not take the full program of requirements for a professional certificate may qualify for a non-professional certificate which is valid for one year only and cannot be continued or reinstated.

For detailed requirements for the Professional Certificate (Ranks B, A, or AA), Non-Professional, Emergency Professional, and Trades and Industries Certificates, consult the Alabama State Department of Education Bulletin 1953, No. 7, available in the office of the Dean of the School of Education.

Student Personnel Services

Wilbur A. Tincher, Coordinator

The Student Personnel Services Program of the School of Education is designed to assist the student in understanding the University and becoming a part of it, in identifying his strengths and limitations, in determining his professional goals, in selecting the proper curriculum in the University, and in securing employment upon graduation.

Recruitment. – Able young people are encouraged to consider teaching as a profession. Efforts of organizations such as the Future Teachers of America in the secondary schools and the Student National Education Association in colleges and of individuals and groups in the profession are aimed primarily at seeking out, informing, and encouraging students who show promise for the teaching profession wherever they may be found.

Financial Aid. – Opportunities for financial aid are available in the form of part-time employment and loans. One type of loan, the Student Loan Program financed by the National Defense Education Act of 1958, provides low-interest, long-term loan funds that are particularly attractive to School of Education students because of special provision for the prospective public school teacher. The NDEA provides that if a student goes into teaching in a public elementary or secondary school, up to 50 per cent of the principal (plus interest) of the loan may be cancelled.

Information and applications for NDEA loans, other financial aid, and employment may be obtained from the Office of Student Financial Aid.

Orientation. – The Orientation Program is designed to provide University personnel with an understanding of the student's background, individuality, and needs and to assist the student in obtaining information about the University and its programs, in learning more about himself, and in selecting professional goals that are compatible with his abilities. All freshmen participate from one to three quarters in an orientation program designed to assist them with personal and professional concerns.

Counseling. – Professional assistance is available to students who have problems of an academic, vocational, or personal nature. Each student in the School of Education is assigned to a faculty advisor who assumes the responsibility for assisting the student whenever possible. Other sources of assistance include personnel in the Office of the Dean, classroom teachers, personnel in the Student Counseling Service, the offices of the Dean of Women, the Dean of Student Affairs, and the Registrar, dormitory head residents and counselors, and ministers of local churches.

Selection and Retention. – The selection and retention program is continuous and is designed to induct and retain in teacher education those students who show promise of success in teaching.

Students who are admitted as freshmen to the University and who plan to prepare to teach should enroll in the two-year pre-professional program in the School of Education. The program consists of 90 quarter hours of appropriate general education and other courses selected in relation to the student's professional objective. The curriculum designation for the pre-professional program is ED. During the pre-professional program students will be assisted through orientation, counseling, and regular courses to examine their strengths and limitations and to evaluate these in relation to the many factors which affect academic and professional success.

Students seeking admission to a Teacher Education Curriculum must submit a written application to the Committee on Selection and Admission to Teacher Education. Students may make application no earlier than the quarter in which they will complete 75 quarter hours and should make application before they have earned a total of 100 quarter hours. Criteria of selection include: evidence of adequate scholastic ability, grade point average of 1.0 (C) on all work attempted, evidence of proficiency in English, commitment to teaching, and evidence of emotional stability and lack of undesirable personal characteristics.

Transfer students must apply for admission to teacher education as outlined above and must meet the criteria as outlined. All transfer students must satisfactorily complete at least one quarter (minimum of 15 quarter hours) in the School of Education prior to making application for admission to teacher education.

At the end of the junior year students who have been admitted to teacher education must apply for admission to student teaching. Those applicants who meet the criteria will be admitted to student teaching.

Applications and specific information about the criteria of selection for admission to teacher education are available from the Student Personnel Office, 203 Thach Hall.

Placement and Follow-Up. – The Teacher Placement Service provides, free of charge, assistance to prospective teachers in locating desirable positions and assistance to employers in identifying candidates. Persons interested in placement should contact the Student Personnel Office, 203 Thach Hall. Follow-up studies of successes, failures, and problems of graduates are made. Further information may be obtained from the Coordinator of Student Personnel Services, 203 Thach Hall.

Field Services

Robert L. Saunders, Coordinator

Field Services constitute that phase of the work of the School of Education which is designed to make the programs and services of the School of Education available to individuals and groups off campus. Field Services enable the School of Education to combine its three major functions: instruction, research, and extension; and make them available to off-campus groups toward assisting in the continuous improvement of public education in the State and region. Several major categories of services are available. These follow with a brief statement of the purpose and nature of the services.

Off-Campus Instruction. – Off-Campus instruction is available through the Field Laboratory Program which enables teachers in service to complete

a total of 16 quarter hours of residence credit toward a graduate degree. The program utilizes the local school setting as a laboratory in which graduate courses are provided as a framework for solving instructional problems related to various areas of study. The program may be used as a supplement to existing in-service programs or as a basis for developing such programs.

Short courses may also be offered on a non-credit basis for groups interested in specific areas of education and psychology. The courses may consist of a series of lectures or workshops and are available to groups of professional and non-professional personnel who may be interested in short courses focused on some specific aspect of their work.

Educational Television. – Resources and materials of the School of Education are made available to the people of the State through a series of telecasts from the Auburn Educational Television studio. Telecasts are planned and presented in cooperation with the Auburn University Educational Television Department through the facilities of the Alabama Educational Television Network. Telecasts are of two major types: (1) direct and enrichment teaching programs for elementary and secondary school students, and (2) programs designed to assist teachers in their professional career development programs.

Further information regarding Educational Television at Auburn University is contained on page 12 of this Bulletin. A schedule of courses and specific course study guides may be obtained by writing the Director, Educational Television, Auburn University.

Lecture and Consultative Service. – The staff of the School of Education is composed of persons who are skilled in general and specific areas of education. The Office of Field Services functions as a coordinating agency for making the services of these faculty members available for lecture and consultative services. These services may be used in connection with in-service education, school and community projects, teacher workshops and institutes, and community clubs and organizations.

School Surveys. – School systems desiring comprehensive school surveys or surveys in specific areas of education such as school plant utilization and construction, school finance, administrative organization, and curriculum and teaching programs, may secure services of this type from the School of Education. Surveys may be conducted as separate projects or in conjunction with the Field Laboratory Program described above.

Research Services. – School systems may wish to conduct research in such areas as the instructional program, administrative and supervisory patterns and organization, school and community projects, the development and evaluation of testing programs, and the use of instructional materials and facilities. The assistance of the staff of the School of Education is available for these activities, either as separate endeavors or in conjunction with the instructional and survey services described above.

Correspondence Study. – Correspondence study provides undergraduate instruction for persons unable to attend college on a regular basis. Courses are available in the areas of English, education, economics, health, physical education and recreation, history, mathematics, psychology, and sociology. Other courses may be added as the demand warrants. Correspondence courses parallel those given on the campus and have been prepared to give the

student the greatest possible mastery of course content and to secure for him the instructional and evaluative services of his instructor. All the courses carry college credit. For information concerning the Correspondence Study Program at Auburn University, see page 19 of this Catalog. For regulations governing the use of correspondence in programs of study at Auburn, see page 52.

Learning Resources Center

John E. Deloney, Coordinator
Clara Szilassy, Writer
Ralph Walker, Writer
Joseph Quinn, Artist

The School of Education provides, through a Learning Resources Center housed in Thach Hall, an extensive collection of materials for teaching and learning. These resources complement the materials in the University Library. They are varied in nature, and range from selected printed publications to graphic productions. Included are such materials of instruction as transparencies for projection, record players, tape recorders, overhead projection equipment and supplies, television receiving sets, and printed references.

The Learning Resources Center is a service center created primarily to improve instruction through effective use of appropriate materials. Personnel is available to assist faculty and students in producing, selecting, and using these learning resources.

Education Interpretation Service. — A phase of the Learning Resources Center is the Education Interpretation Service. Devoted to better communication through the printed page, it aids public agencies and schools in improving their publications, publicity, and educational materials. It also provides readability analyses of textbooks, editorial services, and publication facilities.

In-Service Agricultural Education and Supervision

Thurston L. Faulkner, State Supervisor
Homer F. Gibson, Hubert R. Culver, Ben P. Dilworth, Lewis L. Sellers, and Joseph A. White, Assistant Supervisors
Howard W. Green, Subject Matter Specialist
Homer N. Lewis, Livestock Specialist
Byron F. Rawls, Executive Secretary FFA

In cooperation with the State Department of Education, the School of Education maintains an in-service teacher education and supervisory division. This service extends to 345 departments of vocational agriculture in accredited high schools of the State and to more than 25 teachers of veterans.

Vocational Rehabilitation Service

Frank W. Jenkins, District Supervisor
J. Hoyt Roberts, District Counsellor

The State Department of Education in cooperation with Auburn University maintains the local Rehabilitation Service which provides vocational guidance, counseling, training and placement services to citizens who are handicapped. The Rehabilitation Service also makes available to its handicapped citizens such

services as: surgical and/or medical care, hospitalization, therapeutic treatment and artificial appliances when these services are essential to training and/or employment and the individual is not financially able to secure them.

Professional Curricula

Students who intend to teach should register in the School of Education when they enroll at Auburn. However, students from other divisions of the University and from other colleges who decide to teach may transfer to the School of Education at a later time. Graduates from two-year curricula of approved colleges normally enter the junior year.

Early registration in the School of Education clarifies the student's plans and strengthens his preparation for teaching. He should plan his program in conference with his advisor by the beginning of his sophomore year.

Curriculum For The Professional Preparation Of Elementary School Teachers (EED)

Requirements of the curriculum for the professional preparation of elementary school teachers are distributed as follows:

I. General Education

ED 102-3-4	Orientation 3	MH 181	Fundamental Mathematics (or a more advanced course) 5
AT 342	School Art 5	MU 371	Introduction to Music 3
EH 101-2	English Composition 10		Physical Education 6
EH 253-54	Literature in English 10	PE 110	Hygiene 3
	Social Science (Geography, Sociology, American History, American Government, World History, State History) 35	PG 213	Growth and Development of School-Age Children 5
		PG 214	Educational Psychology 5
			Elective in English 3
	Biological and Physical Sciences 20	SP 431	Principles of Speech Correction 5

II. Required Courses in Professional Education

ED 200	Foundations of Education 4
ED 300	Prins. and Practices in Education 4
ED 329	Creative and Recreational Expression 6
ED 370	Teaching Basic Skills 6
ED 371	Fundamentals of Reading 4
ED 421	Developing Understandings of the Natural & Soc. Environment 6
ED 490	Evaluation in Education 3

III. Student Teaching 10-15

IV. Approved Electives 44

NOTE: A student may emphasize a special area such as art, dramatic arts, health and physical education, industrial arts, mental retardation, music, psychology, school library science, speech correction by carefully planning 27 to 30 hours in one of these fields.

Curriculum Outline

Elementary Education (EED)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
ED 102	Orientation 1	ED 103	Orientation 1	ED 104	Orientation 1
EH 101	English Comp. 5	EC 102	Prin. of Geog. 5		Biological Science .. 5
HY 107	United States Hist. 5	EH 102	English Comp. 5	PG 213	Growth & Dev. of School-Age Child. .. 5
PE 110	Hygiene 3		Biological Science .. 5		
PE	Physical Education .. 1	*PE	Physical Education .. 1	PE	Physical Education .. 1
	*Approved Elective .. 2				*Approved Elective .. 5

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 253	Lit. in English 5	ED 200	Foundations of Ed. 4	HY 208	World History 5
MH 181	Fund. Math. I 5	EH 254	Lit. in English 5	MU 371	Intr. to Music 3
PG 214	Educ. Psychology ..5	HY 207	World History 5	SY 201	Intr. to Sociology ..5
PE	Physical Education ..1	*PE	Physical Education ..1	PE	Physical Education ..1
	*Approved Elective ..1		Approved Elective ..2		*Approved Elective ..4

JUNIOR YEAR

AT 342	Elem. School Art 5	ED 329	Creative & Rec. Expression 6	ED 371	Fund. of Reading ..4
ED 300	Prins. & Practices in Education 4	ED 370	Teaching Basic Skills 6		Physical Science 5
HY 206	U.S. Gov't 5		Physical Science 5	SP 431	Prins. of Speech Correction 5
	Approved Elective ..4		Approved Elective ..1		Approved Elective ..5

SENIOR YEAR

ED 421	Dev. Understand. of the Natural & Social Environment 6	ED 480	Student Teaching ..15	ED 490	Evaluation in Education 3
HY 481	History of Ala. 5				Approved Electives 16
	English Elective 3				
	Approved Elective ..4				

* NOTE: Students taking ROTC will schedule these courses within the elective hours.

Total—210 quarter hours

Curricula For The Professional Preparation Of Secondary School Teachers

The undergraduate curriculum for secondary teachers consists of the following groups of courses: I. General Education; II. Professional Education; III. Student Teaching Internship; IV. Major and Minor Requirements; and V. Electives. The minimum requirement for the bachelor's degree in Secondary Education is 215 quarter hours.

Generally speaking, general education, professional education, and the teaching internship represent constants for all students enrolled in Secondary Education. The minimum hours required for the major and minor vary with the different major-minor combinations. Elective requirements within and outside the defined scope of the different programs also vary.

The Department of Secondary Education provides a program of offerings which enables students to select a major and minor from thirteen subject-matter areas; the major and minor to be in different subject areas. Subject-matter areas included in the program are: art, business education, dramatic arts, English, health and physical education, home economics education, languages, mathematics, music, science, social science, speech, and speech therapy. In addition to the major-minor combinations listed, provisions are made for students to earn a second minor of 30 hours in psychology when the major and minor combinations are selected from English, social science, and/or science. With few exceptions, any student may concentrate his electives and earn a minimum of 20 hours in psychology.

It will be observed that recommendations have been made for major-minor combinations. These recommendations are based upon general knowledge of teaching assignments in secondary schools and some evidence of the interrelatedness among the respective subject-matter areas.

The Dean reserves the privilege of making acceptable substitutions in course requirements, provided such modifications do not conflict with state requirements or college regulations as to degrees in Education.

I. General Education

		Hours
ED 102-3-4	Orientation	3
EH 101-2	English Composition	10
EH 253-54	Literature in English	10
MH 181	Fundamental Mathematics I or approved mathematics elective	5
MS	Military Training	6
PE	Physical Education	6
PG 213	Growth and Development of School Age Children	5
PG 214	Educational Psychology	5
	Social Science—History, Political Science, Sociology and Economics	20
	Science—Biological and Physical	20

II. Required Courses in Professional Education

		Hours
ED 200	Foundations of Education	4
ED 300	Principles and Practices in Education	4
	Teaching in Secondary School, or Teaching in Elementary & Secondary School (Major Field)	3
	Program in Secondary School, or Program in Elementary & Secondary School (Major Field)	3
	Teaching or Program in Secondary School (Minor Field)	3
	or	
	Teaching and Program in Elementary & Secondary School (Minor Field)	6
ED 490	Evaluation, Pupil Growth and Selected Topics	3

III. Student Teaching Internship 10 or 15 Hours

This program is designed to provide the regular student with a student teaching internship of one quarter in an off-campus school situation. Fifteen quarter hours credit is granted for the satisfactory completion of the internship period. Only irregular cases will be approved for students to live on campus and participate in either the ten or fifteen hour program. The person with one or more years of teaching experience may take the summer laboratory program in student teaching for credit of ten quarter hours. Any student completing only ten hours in the student teaching internship program will be required to complete an additional five quarter hours in some other professional education course.

IV. Major and Minor Requirements

ART

Minors: 35 or 40 Hours

AT 105	Drawing I	5
AT 106	Drawing II	5
AT 181	Design Fundamentals I	5
AT 142	Elementary School Art	5
AT 222	Painting I	5
AT 338	Art History I	5
AT 182	Design Fundamentals II	5
		35
AT	Approved Elective	5
		40

Majors: 45 or 60 Hours

	Minor Requirements	35
AT 322	Painting III	5
AT	Approved Elective	5
		45
AT	Approved Electives	15
		60

BUSINESS EDUCATION

Minors: 30 or 35 Hours

SA 101	Secretarial Science I	5
SA 102	Secretarial Science II	5
EC 211-12	Introductory Accounting	10

EC 103 Economic Geography or
EC 102 Principles of Geography 5
EC 200 General Economics 5
30
SA 203 Sect. Science III 5
35

Majors: 45 or 55 Hours

Minor Requirements 35
SA 302 Office Machines & Filing 5
EC Approved Elective 5
45
SA 204 Sect. Science IV 5
EC Approved Elective 5
55

DRAMATIC ARTS

Minors: 31 or 36 Hours

DR 101 Dramatic Production 5
DR 102 Acting & Stage Techniques 5
DR 201 Directing 5
DR 202 Acting & Make-up 5
DR 203 Stage Mechanics 5
DR 313 Drama Appreciation I 3
DR 314 Drama Appreciation II 3
31
DR Approved Elective 5
36

Majors: 41 or 53 Hours

Minor Requirements 31
DR 204 Dramatic Theory 5
DR 413 20th Century Theatre 5
41
Major requirements
(41 less DR 313—3) 38
DR 310 World Theatre 5
DR 311 World Theatre 5
DR 312 World Theatre 5
53

ENGLISH

Minors: 30, 35, or 40 Hours

EH 101-2 English Composition 10
EH 253-4 English Literature 10
Approved Electives from
300-400 English Courses 10
30
Approved Elective 5
35
Approved Elective 5
40

Majors: 50 or 55 Hours

Minor Requirements 30
EH 401 Advanced English Grammar 5
EH 390 Advanced Composition, or
EH 441 Intro. Study of
English Language 5
EH 451 Shakespeare, or
EH 452 Shakespeare 5
EH 357 Survey of American Literature, or
EH 358 Survey of American Literature 5
50
Approved Electives 5
55

HEALTH AND PHYSICAL EDUCATION (Men)

Minors: 35 Hours

PE 201 Introduction to Physical Education ..5
PE 202 Basketball 5
PE 206 Football 5
PE 212 Elementary Physical Education 5
PE 401 Organization & Administration
of Physical Education 5
PE 404 Athletic Injuries & First Aid 5
VM 220 Anatomy and Physiology 5
35

Majors: 55 Hours

Minor Requirements 35
PE 303 Baseball 2
PE 304 Track & Field 3
PE 301 Recreation Leadership 5
VM 221 Anatomy and Physiology 5
Approved Activity Courses 5
55

HEALTH AND PHYSICAL EDUCATION (Women)

Minors: 35 Hours

PE 201 Introduction to Physical Education ..5
PE 212 Elementary Physical Education 5
PE 214 Kinesiology 5
PE 311 Conduct of Rhythmical Activities 5
PE 312-13 Theory & Conduct of Sports 10
VM 220 Anatomy and Physiology 5
35

Majors: 60 Hours

Minor Requirements 35
PE 314 Theory & Conduct of Sports 5
PE 301 Recreation Leadership 5
PE 401 Organization & Administration
of Physical Education 5
VM 221 Anatomy and Physiology 5
Approved Activity Courses 5
60

MATHEMATICS

Minors: 30, 35, or 40 Hours

MH 111-112 Intr. College Mathematics 10
MH 108 Math. of Finance
or
MH 127 Elementary Math. Statistics 5
MH 161 Analytic Geom. & Calculus I 5
MH 262 Analytic Geom. & Calculus II 5
MH 331 Finite Mathematics I or
MH 340 Topology 5
30
MH 352 Finite Mathematics II
or approved elective 5
35
MH 481 College Geometry I 5
40

Majors: 45 or 50 Hours

Minor Requirements 40
MH 127 Elementary Math. Statistics, or Approved Elective when student completed MH 127 in the minor requirement 5

45

Approved Elective 5

50

MODERN LANGUAGES

Spanish

Minor: 30 Hours

FL 131 Elementary Spanish 5
FL 132 Elementary Spanish 5
FL 231 Intermediate Spanish 5
FL 232 Intermediate Spanish 5
FL 331 Advanced Spanish 5
FL 332 Advanced Spanish 5

30

Major: 40 Hours

Minor Requirements 30
FL 431 History of Spanish Lit. 5
FL 432 History of Spanish Languages 5

40

German

Minor: 30 Hours

FL 151 Elementary German 5
FL 152 Elementary German 5
FL 251 Intermediate German 5
FL 252 Intermediate German 5
FL 351 Advanced German 5
FL 352 Advanced German 5

30

Major: 40 Hours

Minor Requirements 30
FL 451 History of German Literature 5
FL 452 History of German Language 5

40

French

Minor: 30 Hours

FL 121 Elementary French 5
FL 122 Elementary French 5
FL 221 Intermediate French 5
FL 222 Intermediate French 5
FL 321 Advanced French 5
FL 322 Advanced French 5

30

Major: 40 Hours

Minor Requirements 30
FL 421 History of French Literature 5
FL 422 History of French Language 5

40

MUSIC

Minor: 27 Hours

MU 131-2-3 Music Theory I, II, III 9
MU 351-2 Music History I, II 6
MU 377 Arranging 3
MU 361 Conducting 3
Applied Music (one area) 6

27

Major: 45 Hours

Minor Requirements 27
MU 231-2-3 Music Theory IV, V, VI 9
MU 434-5 Music Composition I, II 6
Applied Music 3

45

Composite

Major-Minor: 72 Hours

Major Requirements 45
One Minor Area 27

72

Minor Areas:

A. Instrumental: 27 Hours

MU 104 Piano Class 1
MU 116-7-8 Woodwind Class 3
MU 113-4-5 Brass Class 3
MU 119 Percussion Class 1
MU 409 Marching Band Techniques 5
MU 362 Conducting II 1
Band 11
Applied Elective 2

27

B. Choral: 27 Hours

MU 362 Conducting II 1
MU 453 Choral Literature 3
ED 495 Organization of Choral Music 4
Concert Choir 11
Piano or voice 3
Applied Elective 5

27

C. Public School Music: 27 Hours

MU 362 Conducting II 1
ED 497 Organization of Elementary School Music 4
Concert Choir or Band 11
MU 116-7 Woodwind Class 2
MU 113-4 Brass Class 2
MU 119 Percussion Class 1
Piano or Voice 3
Applied Elective 3

27

SCHOOL LIBRARY SERVICE

Minors: 28-30 Hours

ED 472 Books and Related Materials for Children 4
ED 482 Organization & Administration of School Libraries 5
ED 484 Class. & Cataloging of School Library Materials 5
ED 486 Books & Related Materials for Young People 5
AD 485 Audio-Visual Materials 5
ED 487 Practicum in School Library Services 4-6

28-30

SCIENCE

Minors: 30*, 35, 40 or 45 Hours

Three five-hour courses selected from
PS 205 Introductory Physics,
PS 206 Introductory Physics,
ED 473 General Science for Teachers,
CH 103 & 103L General Chemistry &
CH 104 & 104L General Chemistry 15

* Majors in Vocational Home Economics are required to take CH 103 & 103L and CH 104 & 104L for 10 hours of the requirement in physical science. They will substitute VM 210 and VM 311 for ten hours of the requirement in biological science.

SCIENCE (Cont.)

Three five-hour courses selected from

ZY 101 General Zoology,
ZY 102 General Zoology,
BY 101 General Botany &
BY 102 General Botany 15

30

One course in biological or physical science selected from above listing 5

35

One additional course selected from above listing to provide 20 hours in biological science and 20 hours in physical science 5

40

Approved Elective 5

45

Majors: 50 or 55 Hours

Minor Requirements 40
Approved Electives 10

50

Approved Elective 5

55

SOCIAL SCIENCE

Minors: 30, 35, or 40 Hours

HY 107 History of the United States 5
HY 207-8 World History 10
HY 404 Recent U.S. History 5
300-400 Course in History, Sociology, Geography or Approved Economics Course 5
Approved Course in Sociology, Geography or Economics 5

30

Approved Course in Sociology, Geography or Economics 5

35

Approved Course in Sociology, Geography or Economics 5

40

Majors: 45, 50, or 55 Hours

Minor Requirements 40
HY 452 History of Latin America, or
HY 451 The Far East 5

45

Approved Electives from 300-400 Courses 5

50

Approved Electives from 300-400 Courses 5

55

SPEECH AND/OR EDUCATION ON THE EXCEPTIONAL*

Minor: 27 Hours

ED 201 Education (A or B) 2
SP 229 Voice and Diction 5
SP 231 Essentials of Public Speaking 5
SP 431 Principles of Speech Correction 5
Approved electives in relation to area or areas of concentration 10

A. Speech

SP 241 Bases of Speech 5
SP 273 Group Discussion 5

B. Mental Retardation

PG 434 Mental Hygiene or
ED 409 Advanced Hygiene 5
ED 476 Survey of the Exceptional Child 5

C. Speech Correction

Two courses selected from SP 241, SP 273, PG 434, or ED 409, ED 476 10

27

Majors: 40 or 50 Hours**

A. Speech

Minor Requirements 27
SP 235 Interpretative Reading 5
SP 337 Fundamentals of Radio and Television Broadcasting 5
Approved Elective 3

40

Approved Electives 10

50

B. Mental Retardation

Minor Requirements 27
ED 478 Nature of Mental Retardation 5
Approved Electives 8

40

Approved Electives 10

50

C. Speech Correction***

Minor Requirements 27
SP 301 Phonetics 5
SP 321 The Speech Mechanism 5
Approved Elective 3

40

SP 411 Intr. to Problems in Hearing 5
SP 432 Advanced Speech Correction 5

50

* Includes provisions for students to develop major and/or minor areas of concentration in Speech, Speech Correction, or Mental Retardation.

** Requirement of 50 hours for concentration in one area only—when program of study includes two or more areas of concentration a minimum of 40 hours must be completed in one area.

*** Additional work required: 200 clock hours in an approved Speech and Hearing Clinic.

VOCATIONAL HOME ECONOMICS EDUCATION

Major: 63 Hours

HE 102 Basic Foods and Nutrition	5
HE 202 Meal Management	5
HE 105 Fundamentals of Clothing	5
HE 205 Clothing for the Family	5
HE 207 (3)-407 (5) Child Development	8
HE 303 The House I	5
HE 305 Tailoring or	
HE 355 Consumer Textiles	3
HE 313 Home Furnishing or	
HE 233 Home Equipment	5
HE 323 Home Management	5
HE 443 Home Management Residence	5
HE 353 Community and Family Health	3
HE 372 Nutrition & Health	3
HE 457 Family Relationships	5
Approved Electives in Home Economics	1
	63

Major and Minor Areas of Specialization

Each student must select a major and a minor area of specialization. These areas must represent two different teaching fields in the secondary school.

The following chart contains a list of recommendations for major and minor areas of specialization. Recommendations are based on relationship of major and minor areas, previous major-minor patterns, recognized interests of students, and administrative practice in teacher assignments.

A student must elect from one of the recommended major-minor programs when one of the proposed major-minor combinations meets the needs of the student for areas of specialization. He may, however, because of special interests, aptitudes and professional planning, elect a major-minor combination other than those combinations recommended in the chart. Minimum hours required in major and minor for major-minor combinations other than those recommended are: English major 55, minor 40; science major 55 (plus 10 hours of mathematics), minor 40 (plus 10 hours of mathematics); social science major 55, minor 40. Other subject-matter major-minor combination requirements are 45 hours for the major and 35 hours of the minor (with the exception of home economics education which has a 63 hour major and no provision for the minor).

MAJOR AREAS OF SPECIALIZATION AND HOURS REQUIRED	MINOR AREAS OF SPECIALIZATION AND HOURS REQUIRED		TOTAL HOURS
A. Art or Dramatic Arts 55	(1) English	35	90
	(2) Social Science	35	90
B. Art or Dramatic Arts 40	(1) Art	30	70
	(2) Dramatic Arts	30	70
	(3) English	40	80
	(4) Foreign Languages	30	70
	(5) Mental Retardation	27	67
	(6) Music	27	67
	(7) Social Science	40	80
	(8) Speech	27	67
	(9) Speech Correction	27	67
C. Business Education 55	(1) English	35	90
	(2) Science (plus 10 hours mathematics when needed for prerequisites)	30	95
	(3) Social Science	35	90
D. Business Education 45	Mathematics	30	75
E. English 55	Social Science	40	
	Plus a total of 15 hours, exclusive of courses in major-minor, selected from one or more of the following areas: art, audio-visual materials, dramatic arts, foreign languages, journalism, library service, mental retardation, music, psychology, radio, reading, speech, speech correction, and television.		110

MAJOR AREAS OF SPECIALIZATION AND HOURS REQUIRED	MINOR AREAS OF SPECIALIZATION AND HOURS REQUIRED	TOTAL HOURS
F. English 50	(1) Art 30	
	(2) Dramatic Arts 30	
	(3) Foreign Languages 30	
	(4) Mental Retardation 27	
	(5) Speech 30	
	(6) Speech Correction 27	
	For minor selected add 10 hours, exclusive of courses in major-minor, selected from one or more of the following areas: art, audio-visual materials, dramatic arts, journalism, mental retardation, music, psychology, reading, speech, speech correction, and television.	87-90
G. English or Social Science 55	Science (plus 10 hours mathematics when needed for prerequisites) ..45	110
H. Foreign Languages 40	(1) Art 30	70
	(2) Business Education 30	70
	(3) Dramatic Arts 30	70
	(4) English 40	80
	(5) Mathematics 35	75
	(6) Mental Retardation 27	67
	(7) Music 27	67
	(8) Physical Education 30	70
	(9) Science (plus 10 hours mathematics when needed for prerequisites) ..40	90
	(10) Social Science 40	80
	(11) Speech 27	67
	(12) Speech Correction 27	67
I. Health and Physical Education (Men) ..... 55 (for Women) 60	(1) English 40	95
	(2) Mathematics 35	90
	(3) Science (plus 10 hours mathematics when needed for prerequisites) ..35	100
	(4) Social Science 40	95
J. Health and Physical Education (Men) ..... 55 (for Women) 60	Science (plus 10 hours mathematics when needed for prerequisites) ..40	105
K. Home Economics Education 63	(1) English 30	93
	(2) Science (plus 10 hours mathematics when needed for prerequisites) ..30	103
	(3) Social Science 30	93
L. Mathematics 45	(1) Business Education 30	75
	(2) English 40	85
	(3) Physical Education 30	75
	(4) Social Science 40	85
M. Mathematics 50	Science 40	90
N. Music 45	(1) English 40	85
	(2) Social Science 40	85
O. Music (plus 27 additional hours in Instrumental, Choral, or Public School Music) 45	(1) English 30	102
	(2) Social Science 30	102
P. Science (plus 10 hours mathematics) 45	(1) Business Education 35	95
	(2) English 40	100
	(3) Physical Education 35	95
	(4) Social Science 40	100
Q. Science 55	Mathematics 40	95
R. (a) English, (b) Science (plus 10 hours mathematics), or (c) Social Science 50	(1) English 35	
	(2) Science (plus 10 hours mathematics when needed for prerequisites) ..35	

MAJOR AREAS OF SPECIALIZATION AND HOURS REQUIRED	MINOR AREAS OF SPECIALIZATION AND HOURS REQUIRED	TOTAL HOURS
	(3) Social Science ..... 35 For minor selected add 30 hours in psychology including 10 hours of psychology in general education.	115-125
S. Social Science 55	English ..... 40 Plus a total of 15 hours, exclusive of courses in major-minor, selected from one or more of the following areas: art, audio-visual materials, dramatic arts, foreign languages, journalism, library service, mental retardation, music, psychology, radio, reading, speech, speech correction, and television.	110
T. Social Science 45	(1) Art ..... 35 (2) Dramatic Arts ..... 35 (3) Foreign Languages ..... 30 (4) Mental Retardation ..... 27 (5) Music ..... 27 (6) Speech ..... 35 (7) Speech Correction ..... 27 For minor selected add 10 hours, exclusive of courses in major-minor, selected from one or more of the following areas: art, audio-visual materials, dramatic arts, journalism, mental retardation, music, psychology, reading, speech, speech correction, and television.	82-90
U. Speech and/or Education of the Exceptional* 40-50	(1) English ..... 45 (2) Science ..... 45 (3) Social Science 45	85-95 85-95 85-95
V. (a) Art, (b) Business Education, (c) Dramatic Arts, (d) Health and Physical Education, (e) Mathematics, (f) Mental Retardation, (g) Music, (h) Science, (i) Speech, or (j) Speech Correction ..... 45 English or Social Science ..... 55 Foreign Languages 40	School Library Service ..... 27 Plus a second minor of 30 hours selected from (a) English, (b) Science, or (c) Social Science.	97-112

* Includes provisions for students to develop Major areas of concentration in Speech, Speech Correction, or Mental Retardation. Requirement of 50 hours for concentration in one area only —when program of study includes two or more areas of concentration a minimum of 40 hours must be completed in one area.

Schedule and Program Building for Students Majoring and Minoring in the Respective Areas of the Department of Secondary Education

The following curriculum outline sets forth suggestions on scheduling courses for each quarter during the four years of undergraduate study for all secondary education curricula. The outline contains all required courses in general and professional education, provisions for electives, and number of hours for the respective quarters. It provides also for the student to select courses from the major and/or minor for each of the respective quarters. In selecting major or minor courses for the different quarters the student will follow his subject matter major and minor charts on major and minor requirements listed above. In general, courses listed in the major and minor requirements in the above chart should be taken in sequence.

Curriculum in Secondary Education (SED)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
ED 102	Orientation: Personal & Prof. ..1	ED 103	Orientation: Personal & Prof. ..1	ED 104	Orientation: Personal & Prof. ..1
EH 101	English Comp. 5	EH 102	English Comp. 5	BY 101	General Botany,
HY 101	History of the United States,	HY 102	History of the United States, or	ZY 101	General Zoology, (or approved biological science) 5
HY 107	United States Hist., or	EC 102	Prins. of Geog. 5	PG 213	Growth & Dev. of School-Age Child. ..5
EC 102	Principles of Geog. ..5		Major or Minor 5		Major or Minor 5
	Major or Minor 5	PE	Physical Education ..1	PE	Physical Education ..1
PE	Physical Education ..1	PE 112	Hygiene (women), or	PE 112	Hygiene (women), or
PE 111	Hygiene (women), or	MS	Military Tr. (men) ..1	MS	Military Tr. (men) ..1
MS	Military Tr. (men) ..1		18		18
	18				

SOPHOMORE YEAR

PG 214	Educational Psyc. 5	ED 200	Foundations 4	EH 253	English Literature ..5
BY 102	General Botany,	MH 181	Fundamentals of Math. I or approved math. elective 5	EC 200	Gen. Economics,
ZY 102	General Zoology, (or approved biological science) 5		Major, Minor or approved electives ..7	HY 207	World History, or
	Major or Minor 5	PE	Physical Education ..1	SY 201	Intr. to Sociology ..5
PE	Physical Education ..1	MS	Military Tr. (men), or Elec. (women) 1		Major or Minor 5
MS	Military Tr. (men), or Elec. (women) 1		18	PE	Physical Education ..1
	17			MS	Military Tr. (men), or Elec. (women) ..1
					17

JUNIOR YEAR

ED 300	Prins. & Practices in Education 4	EC 200	Gen. Economics,	ED	Teaching, Program (Major-Minor) (or approved elective) ..3
	Major-Minor (or approved electives) ..6	HY 208	World History, or	PS 204	Survey Course in Physics, (or approved physical science) 5
EH 254	English Literature (or approved substitute) 5	SY 201	Intr. to Sociology ..5		Major-Minor (or approved electives) 10
ED	Teaching, Program (Major-Minor) (or approved elective) ..5	ED	Teaching, Program (Major-Minor) (or approved elective) ..3		18
	20		Major-Minor (or approved electives) 10		
			18		

SENIOR YEAR

ED	Teaching, Program (Major-Minor) (or approved elective) ..3	ED	Student Teaching ..15	ED 373	Gen. Science for Teachers (or approved physical science) 5
	Major-Minor, (or approved electives) 15				Major-Minor (or approved electives) 12
	18		15	ED 490	Evaluation, Pupil Growth and Selected Topics 3
					20

NOTE: Students taking Advanced ROTC will schedule these courses within the elective hours.

Total—215 quarter hours

Agricultural Education (AED)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
HY 107	United States Hist. 5	BY 101	General Botany 5	CH 104	General Chemistry ..4
MH 107	College Algebra 5	CH 103	General Chemistry ..4	CH 104L	Gen. Chem. Lab. ..1
ZY 101	General Zoology 5	CH 103L	Gen. Chem. Lab. ..1	ED 104	Orientation 1
ED 102	Orientation 1	ED 103	Orientation 1	EH 102	English Comp. 5
MS	Military Training 1	EH 101	English Comp. 5	HF 201	Orchard Mgt. 5
PE	Physical Education ..1	MS	Military Training 1	MS	Military Training 1
	18	PE	Physical Education ..1	PE	Physical Education ..1
			18		18

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AS 202	Agr. Economics 5	AN 204	Animal Nutrition 5	EC 340	Personal Finance 3
HF 221	Landscape Gardening 5	ED 200	Foundations of Ed. 4	PG 214	Educational Psych. 5
PG 213	Growth & Dev. of School-Age Child. ..5	PS 204	Survey of Physics ..5	SP 231	Ess. Pub. Spkg. 5
MS	Military Training 1	MS	Military Training 1	SY 201	Intro. Sociology 5
PE	Physical Education ..1	PE	Physical Education ..1	MS	Military Training 1
	17		Approved Elective ..2	PE	Physical Education ..1
			18		20

JUNIOR YEAR

AD 405	The School Shop 5	AD 406	Farm & Home Construction 5	AD 446	Teach. Agriculture ..5
AN 303	Farm Machinery 5	AH 303	Livestock Prod. 5	AD 456	Teaching Aids in Agr. Education 4
FY 313	Farm Forestry 5	ED 300	Prins. & Practices in Education 4	DH 200	Funds. of Dairying 5
PH 301	General Poultry 5	JM 315	Agr. Journalism 3	HF 308	Veg. Gardening 5
	20		Approved Elective ..2		19
			19		

SENIOR YEAR

AD 466	Teaching Out-of-School Groups 5	AD 486	Student Teaching in Agr. Education 15	AD 407	Pract. Farm Elec. ..5
AS 401	Farm Management ..5			AY 401	Forage Crops 5
AN 301	Drain. & Terracing 5			ED 490	Evaluation, Pupil Growth & Selected Topics 3
AY 307	General Soils 5			ZY 402	Econ. Entomology ..5
	20		15		18

NOTE: Students taking Advanced ROTC may delete 18 quarter hours to be selected by his advisor.

Total—220 quarter hours

Industrial Arts Education (SED)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
HY 107	United States Hist. 5	CH 103	General Chemistry ..4	CH 104	General Chemistry ..4
MH 107	College Algebra 5	CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1
ZY 101	General Zoology 5	BY 101	General Botany 5	EC 102	Prins. of Geography 5
ED 102	Orientation 1	EH 101	English Comp. 5	EH 102	English Comp. 5
MS	Military Training 1	ED 103	Orientation 1	ED 104	Orientation 1
PE	Physical Education ..1	MS	Military Training 1	MS	Military Training 1
	18	PE	Physical Education ..1	PE	Physical Education ..1
			18		18

SOPHOMORE YEAR

EC 200	Prins. of Economics 5	ED 200	Foundations of Ed. 4	PG 214	Ed. Psychology 5
PG 213	Growth & Dev. of School-Age Child. ..5	PS 204	Survey of Physics ..5	SP 231	Ess. Pub. Spkg. 5
IL 101	Woodworking 1	EG 102	Engr. Drawing 2	SY 201	Intr. Sociology 5
MS	Military Training 1	EG 104	Desc. Geometry 2	EG 105	Engr. Drawing 2
PE	Physical Education ..1	IL 104	Sheet Metal Dsgn. ..1	IL 103	Machine Tools 1
	Elective 5	MS	Military Training 1	MS	Military Training 1
	18	PE	Physical Education ..1	PE	Physical Education ..1
			Approved Elective ..2		20
			18		

JUNIOR YEAR

AD 405	The School Shop 5	ED 300	Prins. & Practices in Education 4	IL 307	General Metals 5
IL 302	Mfg. Processes 3	EH 304	Tech. Writing 3	IL 402	Adv. Woodworking 5
IL 308	Gages & Measurements 5	IM 307	Safety Engr. 5	AT 141	Art Structure 5
AT 216	Materials and Processes 5	AD 346	Voc. & Practical Arts Education 3	IL 102	Welding Science & Application 1
	18	ED 414	Teaching (Major) 3	ED	Teaching (Minor) 3
			Approved Elective ..2		19
			20		

SENIOR YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
AD 485	Audio-Visual Mtls. ..5	ED 425	Student Teaching in Industrial Arts 15	AD 407	Pract. Farm Elec. ..5
	Elective (Minor Method) 5			ED 490	Evaluation in Education 3
ED 423	Program (Major) 3			IL 405	Probs. of Welding ..5
ED 423	Program (Minor) 3				Elective 5
	Elective 4				
	20		15		18

NOTE: Students taking Advanced ROTC will schedule these courses within the elective hours.

Total—220 quarter hours

Department of Psychology (PG)

The curriculum in Psychology requires completion of 40 quarter hours of courses in psychology exclusive of PG 101, Orientation, a minor of 25 or 30 quarter hours, 75 hours of general education, 15 quarter hours of French, German, Spanish, or Russian, 10 hours of technical requirements (College Algebra and Elementary Mathematical Statistics), and ROTC, hygiene, and physical education, a total of 210 quarter hours. Not more than 55 hours in psychology is allowed. General Psychology (PG 211), Psychology of Personality (PG 325), Psychometric Methods (PG 340), Advanced Psychology (PG 410), Experimental Psychology (PG 420), and Tests and Measurements (PG 455) are required courses.

The 75 hours of general education include 10 hours of English Composition plus 10 additional hours in literature and/or composition, 20 hours of social studies including at least one course in Economic Theory and History, one course in Sociology, and one course in History, 25 hours in the biological and physical sciences including Human Physiology and physics or chemistry, and 10 hours of Philosophy from among PA 307, 320, 325, 410, 420, 430, 440.

A minor is defined as 25 hours beyond the requirements in general education and the introductory course or courses in a field, where such exist. Minors may be selected from Chemistry, Economics (including Personnel Management), Industrial Management, Mathematics, Physics, Sociology, Speech (with emphasis on speech pathology and correction), Zoology, and others as approved by the Department Chairman.

Areas of concentration require 25 or 30 hours and include Anatomy and Physiology, Biological Sciences, Child Care and Development, Fine Arts (including Art, Music, Drama), Foreign Language, Industrial Personnel, the Social Sciences, and others as approved by the Department Chairman. Lists of suggested courses to include in minors and areas of concentration are available from advisors and in the Department Office.

Curriculum in Psychology (PG)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	CH or PS	Chem. or Physics Requirement 5
PG 101	Orientation 5	HY	Hist. Requirement ..5	MH 107	College Algebra 5
	Sci. Requirement 5		Sci. Requirement 5		Social Studies Requirement 5
*MS	Military Training 1	*MS	Military Training 1	*MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
	17		17		17

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH	Eng. Requirement ..5	EC	Eco. Requirement 5	MH 127	Elem. Math. Statistics 5
PG 211	General Psychology 5	EH	Eng. Requirement ..5	VM 210	Human Physiology ..5
SY	Soc. Requirement ..5		Sci. Requirement 5		Minor 5
*MS	Military Training 1	*MS	Military Training 1	*MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
	17		17		17

JUNIOR YEAR

FL	Foreign Language ..5	FL	Foreign Language ..5	FL	Foreign Language ..5
PA	Phil. Requirement ..5	PA	Phil. Requirement ..5	PG 410	Adv. Psychology 5
PG 325	Psyc. of Personality 5	PG 340	Psychometric Meth. 5		Minor 5
	**Elective 3		**Elective 3		**Elective 3
	18		18		18

SENIOR YEAR

PG 420	Experimental Psyc. ..5	PG	Elective 5	PG	Elective 5
PG 455	Tests and Measurements 5		Minor 5		Minor 5
	**Minor or Electives ..8		**Minor or Electives ..8		**Electives 8
	18		18		18

Total—210 quarter hours

* Women students will substitute PE 111, 112, 113, Hygiene, in freshman year and electives in sophomore year.

** Students taking Advanced ROTC will schedule these courses within the elective hours.

Division of Engineering

THE DIVISION OF ENGINEERING consists of three branches of services: The School of Engineering, the Engineering Extension Service, and the Engineering Experiment Station. The School of Engineering includes the departments of Pre-Engineering, Aerospace Engineering, Civil Engineering, Electrical Engineering, Engineering Graphics, Industrial Laboratories, Industrial Management, Mechanical Engineering, and Textile Technology, and the Auburn School of Aviation.

School of Engineering

FRED H. PUMPHREY, *Dean*
KARL BRENKERT, JR., *Assistant Dean*

Pre-Engineering Curriculum. – Since the fundamentals of Engineering are common to all branches of the profession, the program of study for the Freshman year is common to all Engineering Curricula. This Freshman Program is administered as a separate curriculum in the Department of Pre-Engineering. (See page 111.)

Admission Requirements. – For admission to the Curriculum in Pre-Engineering, graduation from an approved secondary school with a minimum of 15 units, or the equivalent as shown by examination, is required. While the following courses are not necessary for admission to Engineering, it is highly recommended that four units of English, four units of college preparatory mathematics, two or more units of a foreign language, two or more units of science, one unit of American History and one of American Government be included in the minimum 15 units. The college preparatory mathematics should include two and one-half units of algebra, one unit of geometry including geometry of three dimensions, and one-half unit of trigonometry or the equivalent in a coordinated four year modern college preparatory mathematics program.

Effective in the Summer of 1964, entering students will be expected to have adequate preparation for Mathematics 161, Analytic Geometry and Calculus, and will receive no credit toward an engineering degree for prior mathematics. Prior to 1964 entering students who have demonstrated ability to enter Analytic Geometry and Calculus may do so. Such students will receive advanced standing credit for Mathematics 160.

Although a student who completes the recommended high school mathematics should be eligible for either Mathematics 160 or 161, a series of tests given during Orientation Week will determine the exact placement. Students who do not qualify for admission to Mathematics 160 will require a four-quarter sequence in mathematics to prepare for admission to the School of Engineering as indicated in the Pre-Engineering Program on page 112. Deficiencies in college preparatory mathematics must be scheduled the first resident quarter and must be cleared within one year, either by examination or in non-credit work offered by the University.

Applicants are admitted to curricula of the School of Engineering by the Engineering Admissions Committee after satisfactory performance in the Pre-

Engineering Curriculum outlined on page 111. Applicants for admission to Aerospace, Civil, Electrical and Mechanical Engineering will be approved upon completion with satisfactory grades of prescribed courses in mathematics, 15 hours; English Composition, 10 hours; chemistry, 10 hours; and engineering graphics including descriptive geometry, 6 hours; a total of 41 hours. Admission to Aeronautical Administration and Industrial Management will be approved upon satisfactory completion of 50 quarter hours and to Textile Management and Textile Science upon satisfactory completion of 45 quarter hours of the Pre-Engineering Curriculum.

Engineering Curricula. – Curricula offered are designed to meet the educational requirements of the engineering profession. The program in the fundamental sciences of mathematics, chemistry, and physics is followed by a study of basic engineering sciences. Specialized or departmental courses follow in the third and fourth years. A parallel program giving a general education with emphasis on the humanistic-social studies, including history, literature, economics, philosophy and similar courses is followed during all four years and has as its objective a good general education for the engineering student. This balanced program is designed to train men who will meet the needs of modern industry.

Accredited curricula leads to the degrees of Bachelor of Aerospace Engineering, Bachelor of Civil Engineering, Bachelor of Electrical Engineering, and Bachelor of Mechanical Engineering. The curriculum in Agricultural Engineering is offered by the School of Agriculture and the curriculum in Chemical Engineering by the School of Chemistry.

Engineering students who wish to lighten the strenuous load of a four-year curriculum, and achieve a more thorough understanding of the subject matter, may schedule 17 or 18 hours per quarter rather than the prescribed 20 hours. It is recommended that those students who are not well-grounded in English, mathematics or science plan their programs on the basis of the lighter load. This will require one or more additional quarters of residence.

Management Curricula. – Three management curricula leading to the degrees of Bachelor of Aeronautical Administration, Bachelor of Industrial Management, and Bachelor of Textile Management prepare young men and women for a wide range of administrative and managerial positions in industry. The program of study in the first two quarters of the freshman year in these three curricula is similar to the corresponding program of engineering curricula in order to provide a period of orientation, guidance, and selection after entering college. These students will also be registered in the Department of Pre-Engineering as Pre-Engineering-Management students. They will be enrolled in the management curricula of the School of Engineering upon successful completion of the Freshman Program.

Science Curriculum. – In addition to the Engineering and Management Curricula, a course in Textile Science is offered in the Department of Textile Technology. The degree Bachelor of Textile Science with majors in Textile Physics and Textile Chemistry is awarded to graduates in this curriculum.

Graduate Degrees. – Master of Science degrees are offered in Aerospace, Civil, Electrical, and Mechanical Departments. A Doctor of Philosophy degree is offered in the Mechanical Engineering Department. For requirements for these degrees see under Graduate School.

Engineering Extension Service

JOHN L. CAIN, *Director*
EDWARD B. TAYLOR, *Assistant Director*

The Engineering Extension Service was established in 1937 to extend off-campus use of the facilities of all branches and departments of the Division of Engineering in such a manner as to enable the University to render a greater service to the citizens, the government, and the industries of the State of Alabama, (1) by promoting the program of co-operative education for business and industry, and (2) by conducting technical short courses and conferences for industrial personnel.

Cooperative Education Program

The Cooperative Education Program in engineering provides opportunities for students to alternate quarters of academic study with quarters of industrial experience.

The coordination of academic study and work experience combines theory and practice in the educational process. As a consequence, students find more meaning in their studies and their motivation is increased. The industrial experience contributes to the development of a sense of individual responsibility. The student's judgment and maturity also develop more fully, and a better appreciation of the importance of human relations in industry is gained. Since the employer pays the student a wage or salary during the industrial quarters, this assists the student considerably in his educational expenses.

The Cooperative Education Program is a five-year plan. A student must complete at least two quarters of the freshman year with an above-average scholastic record before he is placed in industry. Transfer students are also considered for the program. Normally a student has seven quarters in industry, and during the senior year he remains in continuous residence in school.

Additional information may be secured from the Director, Engineering Extension Service. See page 34 of this catalog also.

Auburn School of Aviation

ROBERT G. PITTS, *Director*

The Auburn School of Aviation was established in 1942 as a department of the School of Engineering to offer flight and ground school instruction in aircraft piloting for resident and extension students of the University, for the Armed Forces, and for the general public; and to serve the citizens of Alabama and the Southern Region by providing other services in the broad field of aviation. The School cooperates fully with the Federal Aviation Agency in conducting special aviation training programs. At the present time the school is conducting a flight program for the training of private pilots, commercial pilots, and flight instructors.

The University is exceptionally well equipped to conduct pilot training programs inasmuch as it owns a large modern airport of 325 acres conveniently located within two miles of the campus. The landing field consists of two paved runways 4,000 feet long and one sod strip 5,600 feet long. Other facilities include two large hangars and a modern Administration Building.

In addition to the training of pilots, such other public service accommodations as airplane storage, servicing, maintenance, and repair are provided at the airport. In conjunction with the Aerospace Engineering Laboratories located on the campus, the operation at the airport serves as an excellent laboratory of practical training for students enrolled in the curricula of Aeronautical Administration and Aerospace Engineering. Because of the excellent aviation facilities, the University has been fully certified by the Federal Aviation Authority as an Approved Ground and Flight School.

The Director of the Auburn School of Aviation is an Aircraft Inspection Representative for the Federal Aviation Agency.

Engineering Experiment Station

FRED H. PUMPHREY, *Director*
KARL BRENKERT, JR., *Assistant Director*

The Engineering Experiment Station was authorized by the Board of Trustees on February 22, 1929. It is prepared to conduct basic research projects in Aerospace, Chemical, Civil, Electrical, and Mechanical Engineering, and Textile Technology. Emphasis is placed on those projects which offer opportunities to help foster and develop the industries of Alabama. Research projects are conducted by the established engineering departments of the University under the direction of the Engineering Experiment Station. Results are published in Engineering Experiment Station Bulletins.

Not only does the Engineering Experiment Station offer a program of research service and experimental aid, but it serves the equally important function of training students for careers in many fields of research and development. These research scientists and engineers are essential to the industrial growth of Alabama.

Pre-Engineering

HOWARD STRONG, *Assistant to the Dean for Pre-Engineering*

The Pre-Engineering Program consist of a freshman program of studies to prepare students for admission to the School of Engineering with sophomore standing.

The freshman Pre-Engineering curriculum shown below is uniform for four Engineering curricula: namely, Aerospace, Civil, Electrical, and Mechanical Engineering.

Curriculum in Pre-Engineering (PN)

FRESHMAN YEAR

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER		
EH	101	English Comp. 5	EH	102	English Comp. 5	EH	108	Classical Lit. 5
CH	103	Gen. Chemistry 4	CH	104	Gen. Chemistry 4	HY	107	United States Hist. 5
CH	103L	Gen. Chem. Lab. ..1	CH	104L	Gen. Chem. Lab. ..1	MH	262	Anal. Geom. & Cal. 5
MH	160	Intr. College Math. 5	MH	161	Anal. Geom. & Cal. 5	EG	105	Engr. Drawing II ..2
EG	102	Engr. Drawing I ...2	EG	104	Descriptive Geom. ..2	HY	105	Current Events 1
MS		Military Training 1	MS		Military Training 1	MS		Military Training 1
PE		Physical Education ..1	PE		Physical Education ..1	PE		Physical Education ..1
IL	103	Machine Tool Lab. 1	IL	102	Welding Science & Applications 1			
		20			20			20

Students may be admitted to the above three quarter program only during the Fall and Summer Quarters, and only if they qualify for admission to MH 160, Introduction to College Mathematics.

Students who do not qualify for admission to MH 160, Introductory College Mathematics, are required to complete MH 111 and 112, Introduction to College Mathematics, a two-quarter sequence. Five hours of credit toward graduation in engineering will be given for the two-quarter sequence. These students will require four quarters to qualify for admission to the School of Engineering. No formal curriculum is provided for such students, but a suggested program follows:

FIRST QUARTER

EH 101	English Composition	5
MH 111	Introduction to College Math.	5
EG 102	Engineering Drawing I	2
HY 105	Current Events	1
IL 103	Machine Tool Laboratory	1
MS	Military Training	1
PE	Physical Education	1
		16

SECOND QUARTER

EH 102	English Composition	5
MH 112	Introduction to College Math.	5
CH 103	General Chemistry	4
CH 103L	Gen. Chem. Laboratory	1
MS	Military Training	1
PE	Physical Education	1
		17

THIRD QUARTER

EG 104	Descriptive Geometry	2
MH 161	Analytic Geometry & Calculus	5
CH 104	General Chemistry	4
CH 104L	General Chem. Laboratory	1
HY 107	United States History	5
MS	Military Training	1
PE	Physical Education	1
		19

FOURTH QUARTER

EG 105	Engineering Drawing II	2
MH 262	Analytic Geometry and Calculus	5
EH 108	Classical Literature	5
IL 102	Welding Science & Application	1
	*Elective	3
MS	*Military Training	1
PE	*Physical Education	1
		18

* This course is part of the sophomore curriculum, and credit earned counts as such.

The freshman program of studies in the Aeronautical Administration curriculum is given on page 113, in the Industrial Management curriculum on page 118, in the Textile Management curriculum on page 121, in the Textile Science curriculum on page 122.

Curricula in Engineering

Humanistic-Social Studies. – The various engineering curricula are arranged to allow students in those curricula the opportunity to schedule a minimum of 30 quarter credit hours of humanistic-social studies. A few courses are prescribed, but the student may choose, in addition, several humanistic-social courses of particular interest to him. The courses from which he may choose these electives are listed below.

APPROVED ELECTIVES

HISTORY AND GOVERNMENT

HY 204	History of the Modern World	3
HY 206	United States Government	5
HY 207 or 208	World History	5
HY 311	Medieval History	5
HY 312	Modern European History	5
HY 314	United States Colonial History	3
HY 315	International Organization	3
HY 322	The U.S. in World Affairs	3
HY 371	History of the West	3
HY 407	Political Science	5
HY 460	Great Leaders of History	3
HY 472	History of England	5
HY 482	History of the South	3
HY	Current Events	1

LITERATURE

EH 253	Literature in English	5
EH 254	Literature in English	5
EH 320	An Introduction to Drama	3
EH 350	Shakespeare's Greatest Plays	3
EH 355	Masterpieces of World Literature	3

EH 365 Southern Literature 3
EH 381 The Literature of the Age of Reason 3
EH 385 The Impact of Science and Technology upon Modern Literature 3
SP 334 Great American Speeches 3

THE ARTS

AT 332 American Painting and Sculpture 3
AT 431 Contemporary Art 3
AR 360 Appreciation of Architecture 3
DR 313 Drama Appreciation I 3
DR 314 Drama Appreciation II 3
MU 373 Appreciation of Music 3
MU 374 Masterpieces of Music 3

ECONOMICS

EC 301 Geo-Political Basis of World Powers 3
EC 405 Cultural Geography of the World 5
EC 407 World Resources and Their Utilization 5

SOCIOLOGY

SY 201 Introduction to Sociology 5
SY 204 Social Behavior 5
SY 307 The Court and Penal Administration 3
SY 311 Technology and Social Change 3

PHILOSOPHY AND RELIGION

PA 301 Introduction to Philosophy 3
PA 302 Introduction to Ethics 3
PA 307 Scientific Reasoning 5
PA 308 Introduction to Logic 3
PA 330 Philosophy of Religion 3
PA 350 Philosophy of Science 5
PA 440 American Philosophy 5
RE 303 Christian Ethics 5
RE 305 Comparative Religion 3
RE 306 Studies of the Gospels 3

PSYCHOLOGY

PG 211 General Psychology 5
PG 311 Behavior of Man 3
PG 461 Industrial Psychology 5

Aeronautical Administration

The curriculum in Aeronautical Administration provides training for men and women who intend to hold positions connected with concerns engaged in aircraft manufacturing and air transportation. Study in the methods, economics, and principles of business is combined with certain fundamental aeronautical courses, thus resulting in a curriculum which will qualify graduates for positions as aircraft production executives; air traffic experts; and managers of airlines, airports, aircraft agencies, and other business activities in the aviation industry. Suggested groups of major electives enable students in their senior year to specialize in business administration, industrial relations, production management, sales management, and pilot training.

Curriculum in Aeronautical Administration (AA)

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
CH 103 General Chemistry ..4	CH 104 General Chemistry ..4	HY 107 United States Hist. 5
CH 103L Gen. Chem. Lab. ..1	CH 104L Gen. Chem. Lab. ..1	MH 108 Math. of Finance 5
EH 101 English Comp. 5	EH 102 English Comp. 5	PS 204 General Physics 5
MH 111 Intr. College Math. 5	MH 112 Intr. College Math. 5	EG 105 Engin. Drawing II ..2
EG 102 Engin. Drawing I 2	EG 104 Descriptive Geom. ..2	IL 104 Sheet Metal Design & Fabrication 1
IL 102 Weld. Sci. & App. ..1	IL 103 Machine Tool Lab. ..1	
MS Military Training 1	MS Military Training 1	MS Military Training 1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

SOPHOMORE YEAR

EC 213 Engin. Accounting ..5	AA 201 Elem. Aeronautics ..5	AA 303 Air Navigation I 5
EH 345 Bus. and Prof. Writing 5	EC 200 General Economics ..5	AA 304 Meteorology 5
HY 206 U.S. Gov't or	EC 214 Cost Control 5	IM 306 Industrial Mgt. 5
EC 103 Econ. Geography 5	EH 107 Intr. to Literature ..3	SP 305 Public Speaking 3
**SA 113 Typewriting 3	MS Military Training 1	MS Military Training 1
MS Military Training 1	PE Physical Education ..1	PE Physical Education ..1
PE Physical Education ..1		

** Students who have one unit of high school typing will not be allowed credit for SA 113. An elective, approved by the Head of the Department, will be substituted.

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
AA 307 Air Navigation II 5	AA 420 Civil Air Regulat. 5	AA 407 Aircraft Power-plants 5
EC 404 Office Mgt. 5	EC 341 Business Law 5	EC 345 Statistics 5
EC 442 Personnel Mgt. 5	IM 302 Production Control ..5	EC 463 Corp. Finance 5
*Elective 3	*Elective 3	*Elective 3

SENIOR YEAR

AA 416 Airport Mgt. 5	AA 418 Air Transportation ..5	AA 417 Airline Operation 5
AA 419 Air Traffic Control ..5	AA 425 Aircraft Compon'ts ..5	PG 461 Industrial Psychology 5
Major Elective 5	Major Elective 5	Major Elective 5
*Elective 3	*Elective 3	*Elective 3

Total—228 quarter hours

* Courses used for General Electives must be approved by the Head of the Department.

SUGGESTED MAJOR ELECTIVES

In addition to the subjects listed below, other subjects may be used as major electives upon approval by the Head of the Department.

BUSINESS ADMINISTRATION
EC 323 Real Estate 5
EC 332 Credits and Collection 5
EC 342 Business Law 5
EC 434 Purchasing 5
EC 464 Investments 5
EC 472 Economics of Transportation 5

INDUSTRIAL RELATIONS
EC 350 Labor Problems 5
EC 444 Labor Legislation 5
EC 445 Industrial Relations 5
EC 450 Job Evaluation & Incentive Systems 5
IM 307 Safety Engineering 5
IM 410 Industrial Training 5

PILOT TRAINING
AA 306 Private Pilot Training—Flight 3
AA 406 Commercial Pilot Training—Flight ..3
AA 423 Flight Instructor Training 3
AA 424 Instrument Flying 3
AA 427 Multi-Engine Training 3

PRODUCTION MANAGEMENT
EE 307 Illuminating Engineering 5
IL 308 Gages and Measurements 5
IM 420 Materials Handling 5
IM 310 Methods Engineering 5
IM 311 Time Study 5
IM 402 Quality Control 5
IM 412 Engineering Economy 5

SALES MANAGEMENT
EC 331 Marketing 5
EC 333 Salesmanship 5
EC 432 Advertising 5

Aerospace Engineering

The curriculum in Aerospace Engineering provides an especially good educational background for those wishing to enter the many areas of today's major scientific effort – conquest of space. It also places emphasis on conventional aircraft, missiles and aero-propulsion systems. The first two years of the curriculum are devoted to the basic subjects of mathematics, physics and mechanics. The last two years deal with such broad areas as aerodynamics, design, propulsion, structures and space science. During the senior year students may schedule technical electives in several fields of specialization. The Aerospace Engineering Curriculum also serves as excellent background for graduate work and research.

Curriculum in Aerospace Engineering (AE)

FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 111)

SOPHOMORE YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
MH 263 Anal. Geom. & Cal. 5	MH 264 Anal. Geom. & Cal. 5	MH 361 Diff. Equations 5
PS 201 General Physics—Mechanics 5	PS 202 General Physics—Heat, Sound, & Light 5	PS 203 General Physics—Elec. & Magnetism ..5
EC 200 Gen. Economics 5	HY 206 U.S. Government 5	ME 205 Applied Mechanics-Statics 5
EH 208 Lit. of the Western World 3	AE 205 Aerospace Fundamentals 3	AE 206 Elem. Astronautics ..3
MS Military Training 1	MS Military Training 1	MS Military Training 1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1

JUNIOR YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
ME 307	Applied Mechanics-Dynamics 5	ME 306	Strength of Materials I 5	AE 413	Theoretical Aerodynamics 5
ME 301	Thermodynamics I ..5	AE 301	Basic Aerodynamics 5	AE 308	Aircraft Structures I 5
*SP 305	Public Speaking 3	AE 309	Aerodynamic Laboratory I 1	AE 415	Rocket & Jet Propulsion 5
AE 300	Aerospace Analysis ..5	PS 301	Intermediate Elec. & Magnetism 5	PS 302	Electronics 5
EC 206	Socio-Economic Foundations of Contp. America 3		**Elective 3		

SENIOR YEAR

AE 404	High Speed Aerodynamics 5	AE 411	Airplane Design 5	AE 403	Stability & Control 5
AE 409	Aircraft Structures II 5	AE 429	Aircraft Vibration & Flutter 5	AE 408	Aerodynamic Laboratory II 1
AE 412	Aircraft Structures Lab. 2	AE 401	Aeronautical Problems I 1	AE 402	Aeronautical Problems II 1
	Technical Elective ..5		Technical Elective ..5	AE 431	Astronautics 5
	**Elective 3		**Elective 3		Technical Elective ..5
					**Elective 4

Total—240 quarter hours

* Six hours of Advanced ROTC may be substituted for SP 305 (3 hrs.), and three additional hours approved by the Department Head.

** Courses used for electives must be selected from the list of Humanistic-Social Studies (p. 112), subject to approval of the Department Head.

SUGGESTED TECHNICAL ELECTIVES

In addition to the subjects listed below, other subjects may be used as technical electives upon approval of the Head of the Department.

AE 405	Boundary Layer Theory and Aerodynamic Heating 5	ME 421	Heat Transfer 5
AE 414	Gas Dynamics 5	MH 460	Numerical Analysis I 5
AE 428	Space Propulsion Systems 5	PS 305	Introduction to Modern Physics 5
AE 430	Rotary Wing Aircraft 5	PS 405	Nuclear Physics 5

Civil Engineering

The Civil Engineering curriculum is designed to provide a sound training in mathematics and the physical sciences, in the applied sciences and principles of civil engineering, in a limited number of technical electives, and in humanistic-social studies. The objective of the curriculum is to prepare the graduate for further training by his employer and for the eventual practice of civil engineering. Courses in mathematics and the physical sciences constitute the foundation upon which the professional training is built. The success of the professional training is dependent upon the strength of this foundation. Technical electives provide for limited specialization in some branch of civil engineering such as highway, hydraulic, sanitary, soils or structural engineering.

Training in civil engineering may lead to professional activities in analysis, design, research, construction, production or sales. Such activities may be directly or indirectly concerned with highways, railroads, dams and appurtenant structures, rivers, harbors, water supply, sewage disposal, industrial wastes, foundations, buildings, bridges, etc.

The civil engineer has held a leading role in the development of our country. As in most of the professions, great changes are taking place in methods and equipment. It is to be expected that the civil engineer will take full advantage of recent advancements in science.

Curriculum in Civil Engineering (CE)

FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 111)

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 200	General Economics ..5	CE 201	Surveying I 5	CE 203	Surveying II 5
EH 208	Literature of the Western World 3	MH 264	Analytic Geometry & Calculus 5	EC 206	Socio-Econ. Found. of Contp. America ..3
MH 263	Analytic Geometry & Calculus 5	ME 202	Engi. Materials Science-Structure 3	ME 205	Applied Mech.-Statics 5
PS 201	Physics-Mechanics ..5	PS 202	Physics-Heat, Light & Sound 5	PS 203	Physics-Electricity & Magnetism 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

CE 302	Highway Engin. I ..5	CE 308	Hydraulics 5	CE 304	Theory of Structures I 5
CH 342	Geology 3	CE 314	Analysis of Aerial Photographs 3	CE 305	Sanitary Engin. I ..5
ME 307	Applied Mech.-Dynamics 5	ME 306	Strength of Materials I 5	CE 406	Hydraulics Lab. 1
MH 361	Diff. Equations 5	EE 202	Elec. & Magnetic Circuits I 5	EE 305	Electronics & Mach. 5
	°Elective 3	†SP 305	Public Speaking 3	ME 309	Materials Testing Laboratory 1
					°Elective 3

SENIOR YEAR

CE 401	Theory of Structures II 5	CE 403	Highway Materials Lab. 2	†EC 343	The Law and Contracts 3
CE 405	Sanitary Engin. II ..5	CE 404	Reinforced Concrete 5	IM 412	Engin. Economy 5
CE 418	Soil Mechanics 5	CE 414	Struc. Design I 5	ME 310	Thermodynamics 5
	Technical Elective ..5		Technical Elective ..5		Technical Elective ..5
			°Elective 3		

Total—240 quarter hours

° Courses used for electives must be selected from the list of Humanistic-Social Studies (p. 112), subject to approval of the Department Head.

† Six hours of Advanced ROTC may be substituted for SP 305 (3 hrs.) and EC 343 (3 hrs.).

SUGGESTED TECHNICAL ELECTIVES

CE 400	Higher Surveying 5	CE 420	Sanitary Engineering Lab. 5
CE 402	Intermediate Structures 5	CN 440	Nuclear Engineering 5
CE 407	Municipal Engineering I 5	EC 345	Statistics 5
CE 408	Engineering Foundations 5	ME 206	Engi. Materials Science-Properties ..3
CE 409	Public Health Engineering 5	ME 335	Engi. Materials Science-Physical Metallurgy 4
CE 410	Highway Engineering II 5	MH 402	Engineering Mathematics I 5
CE 411	Flow in Open Channels 5	MH 404	Engineering Mathematics III 5
CE 412	Hydrology 5	MH 460	Numerical Analysis I 5
CE 413	Hydraulic Structures 5	MH 461	Numerical Analysis II 5
CE 415	Construction Planning 5	PS 401	Theoretical Physics I—Mechanics 5
CE 416	Prestressed Concrete Design 5	PS 402	Theoretical Physics II—Mechanics ..5
CE 417	Structural Design II 5	PS 405	Nuclear Physics 5
CE 419	Municipal Engineering II 5		

Electrical Engineering

The curriculum in Electrical Engineering is designed to keep abreast of the rapid development recently made in the electronic and power fields. Furthermore, students in Electrical Engineering receive comprehensive training in those basic principles which are likely to be useful in any field of engineering which they may enter.

The Electrical Engineering Curriculum recognizes that the student's major interest may lie in (1) the application of electronics in communications, telemetering, wave propagation, and other phases of electronics, or (2) the field of electric power including generation and transmission, the design and manufacture of energy conversion apparatus and industrial electronics control systems. The student in his senior year may specialize within the Electrical Engineering Curriculum by selecting a group of courses pertaining either to the

Electronic Field or the Power Field as defined above. He may pursue a special interest by selecting from courses in illuminating engineering, telephone engineering, television engineering, electric power systems, advanced circuit theory, microwave engineering, transistor electronics or courses in Aerospace, Civil, or Mechanical Engineering, and in Mathematics or Physics.

Curriculum in Electrical Engineering (EE)

FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 111)

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 200	General Economics ..5	EE 202	Electrical Engi. Fundamentals I 5	EC 206	Socio.-Econ. Found. of Contp. America ..3
EG 204	Kin. of Machines 3	EH 208	Literature of the Western World 3	EE 203	Electrical Engi. Fundamentals II 5
MH 263	Analytic Geometry & Calculus 5	MH 264	Analytic Geometry & Calculus 5	MH 361	Diff. Equations I 5
PS 201	Physics-Mechanics ..5	PS 203	Physics-Electricity & Magnetism 5	PS 202	Physics-Heat, Light & Sound 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

EE 312	Alternating Current Laboratory I 1	EE 320	Electronics 5	EE 309	D.C. Machinery 5
EE 331	Circuit Analysis I 5	EE 321	Electronics Lab. 1	EE 310	D.C. Laboratory 1
MH 402	Engin. Math. I 5	EE 332	Linear Transient Analysis 5	EE 333	Circuit Analysis II 5
ME 205	Applied Mech.-Statics 5	ME 307	Applied Mech.-Dynamics 5	EE 340	Comm. Engin. I 5
†SP 305	Public Speaking 3	MH 403	Engin. Math. II 5		••Elective 3
				EE 341	Comm. Engin. Lab. I 1

SENIOR YEAR

EE 402	Alternating Current Machinery I 5	*EE 430	Radio Transmission Lines or
EE 403	Alternating Current Laboratory II 1	‡EE 406	Symmetrical Components 5
‡EE 410	Power Transmission Lines or	*EE 448	Comm. Engr. II or
*EE 450	Applied Electromagnetism 5	‡EE 413	Alternating Cur. Machinery II 5
ME 310	Thermodynamics 5	*EE 449	Comm. Engr. Lab. II and
	••Elective 3	*EE 451	Comm. Engr. Lab. III or
		‡EE 414	Alternating Cur. Lab. III 2
		*EE 441	Radio Freq. Meas. or
		‡EE 316	Electrical Meas. 3
		ME 306	Strength of Materials I 5
EE 442	Ind. Electronics & Control Ckts. 5		
*EE 453	Comm. Engr. Lab. IV or		
‡ME 309	Materials Testing Lab. 1		
ME 434	Fluid Mechanics & Heat Transfer 5		
	Technical Elective ..5		
	••Elective 5		

Total—240 quarter hours

† Six hours of Advanced ROTC may be substituted for SP 305 (3 hrs.), and three additional hours approved by the Department Head.

* Required courses for Electronics and Communications Field.

‡ Required courses for Electric Power Field.

•• Courses used for electives must be selected from the list of Humanistic-Social Studies (p. 112), subject to approval of the Department Head.

SUGGESTED TECHNICAL ELECTIVES

In addition to the courses listed below, other courses may be used as technical electives upon approval by the Head of the Department. Students in either field of Electrical Engineering may select as a technical elective any course required of the other field. They may also select any non-required course numbered 300 or over offered by the Aerospace Engineering, Civil Engineering, Mathematics, Mechanical Engineering, or Physics Departments.

The following courses, not covered by the above, are also suggested as technical electives:

EE 307	Illuminating Engineering 5	EE 439	Electric Waves 5
EE 404	Telephone Engineering 5	EE 440	Television Engineering 5
EE 405	Electric Power Systems 5	EE 443	Transistor Electronics 5
EE 408	Advanced A.C. Circuits II 5	EE 444	Fundamentals of Digital Computers 5
EE 433	Frequency Modulation 5	EE 445	Nuclear Instrumentation 5
EE 438	Advanced UHF Circuits 5	IM 412	Engineering Economy 5

Industrial Management

The curriculum in Industrial Management is offered as a program of professional education in preparation for administrative and managerial positions in manufacturing, communication, and transportation industries. Emphasis is placed upon courses dealing with the operational and production phases of these industries rather than the technical and engineering phases. However, because of the technical nature of industry, about one-fifth of the curriculum is devoted to subjects dealing with mathematics, science, and the fundamentals of engineering. An even greater amount of time is devoted to the humanistic-social studies. Such a program is frequently and quite appropriately referred to as "human engineering."

Combining basic training in both the technological and social sciences with more advanced courses in management, the curriculum provides a broad professional education for a wide field of employment opportunities. In the senior year students are given considerable freedom of choice in the selection of major electives toward preparation for different industries.

Curriculum in Industrial Management (IM)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 103	General Chemistry ..4	CH 104	General Chemistry ..4	EH 108	Classical Literature 5
CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1	HY 107	United States Hist. 5
EH 101	English Comp. 5	EH 102	English Comp. 5	MH 161	Anal. Geometry & Calculus I 5
MH 111	Intr. College Math. 5	MH 112	Intr. College Math. 5		
EG 102	Eng. Drawing I 2	EG 104	Descriptive Geom. ..2	EG 105	Eng. Drawing II 2
IL •••	Industrial Lab. 1	IL •••	Industrial Lab. 1	IL •••	Industrial Lab. 1
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

••• IL 103 Machine Tool Laboratory, required for one of these laboratories. Remaining requirements may be scheduled from the following: IL 102, Welding Science and Application; IL 104 Sheet Metal Design and Fabrication; or IL 105 Foundry Technology.

SOPHOMORE YEAR

HY 206	U.S. Gov't 5	EC 200	General Economics ..5	EC 214	Cost Control 5
MH 262	Anal. Geometry & Calculus II 5	EC 213	Eng. Accounting 5	IL 308	Gages & Meas. 5
		PS 206	Intr. Physics 5	IM 306	Industrial Mgt. 5
PS 205	Intr. Physics 5	IL 302	Mfg. Processes 3	IL 303	Mfg. Processes 3
IL 301	Mfg. Processes 3	MS	Military Training 1	MS	Military Training 1
MS	Military Training 1	PE	Physical Education ..1	PE	Physical Education ..1
PE	Physical Education ..1				

JUNIOR YEAR

IM 310	Methods Eng. 5	EE 304	Electric Circuits 5	EC 345	Statistics 5
IM 313	Budget Control 5	IM 307	Safety Engineering ..5	IM 302	Production Control ..5
ME 319	Elem. Heat Power ..5	IM 311	Time Study 5	IM 316	Electronic Data Processing Systems ..5
IM 314	Electronic Data Processing 3	IM 315	Digital Computer Programming 3	EH 304	Technical Writing ..3
	*Elective 3		*Elective 3		Elective 3

SENIOR YEAR

IM 420	Materials Hand. 5	EC 450	Job Evaluation & Incentive Systems 5	IM 406	Problems in Industrial Mgt. 5
EC 442	Personnel Mgt. 5	IM 405	Industrial Plants 5	IM 412	Engin. Economy 5
IM 402	Quality Control 5		Major Elective 5	IM 417	Oper. Research 5
IM 418	Contracts & Spec. 3		*Elective 3		*Elective 3
	*Elective 3				

Total—240 quarter hours

* Courses used for general electives must be approved by the Head of the Department.

SUGGESTED MAJOR ELECTIVES

In addition to the subjects listed below, other subjects may be used as major electives upon approval by the Head of the Department.

GENERAL

EC 474 Advanced Statistics 5
EE 307 Illuminating Engineering 5

INDUSTRIAL MANAGEMENT

IL 405 Problems in Weld Engineering 5
IL 406 Problems in Machining 5
IM 308 Inventory Control 5
IM 410 Industrial Training 5
IM 411 Plant Location 5
IM 413 Sales Engineering 5
IM 414 History of Management 5
IM 415 Plant Maintenance 5
PG 461 Industrial Psychology 5

INDUSTRIAL RELATIONS

EC 350 Labor Problems 5
EC 444 Labor Legislation 5
EC 445 Industrial Relations 5
PG 455 Psychological Tests & Measurem'ts ..5
SY 408 Industrial Sociology 5

Mechanical Engineering

Students who complete the curriculum in Mechanical Engineering have a broad field from which to select their life's work. Industrial positions in manufacturing, marketing, maintenance, and design are available to graduate mechanical engineers in a large variety of companies which produce mechanical, chemical, electrical, aeronautical, and petroleum products. In addition, the graduate is prepared by his college training, when supplemented by experience and practical training, to specialize in management or engineering services, such as consulting and sales. The curriculum also is suitable for students intending to enter the fields of engineering education and research. It is an excellent base for further study at the graduate level in this and allied fields.

The curriculum provides the student with a strong background in mathematics and the physical sciences. The basic engineering science fields of engineering mechanics, materials science, thermodynamics, fluid mechanics, and heat transfer are covered in depth to provide the student with understanding and the ability to solve problems in these areas. In addition, professional training is given in combustion engines, including gas turbines and rockets, power plants, air conditioning, refrigeration, automatic controls, turbomachinery and machine design. A series of courses in electrical theory and electronics is also included to equip the graduate with needed fundamental knowledge in this rapidly expanding field.

Humanistic-social subjects are required to give the student breadth and to add to his general education.

Technical electives are provided in the senior year of the curriculum to enable students to specialize to a limited extent. Students intending to undertake graduate studies may take additional mathematics in lieu of certain professional technical electives.

Curriculum in Mechanical Engineering (ME)

FRESHMAN YEAR

(See Pre-Engineering Curriculum, Page 111)

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 200	General Economics ..5	MH 264	Analytic Geometry & Calculus 5	EE 202	Electrical Engi. Fundamentals I 5
MH 263	Analytic Geometry & Calculus 5	ME 205	Applied Mech.-Statics 5	MH 361	Diff. Equations I 5
PS 201	Physics-Mechanics ..5	ME 202	Engi. Materials Science-Structure 3	PS 203	Physics-Electricity & Magnetism 5
EC 206	Socio-Economic Foundations of Contemporary America ..3	PS 202	Physics-Heat, Light & Sound 5	ME 206	Engi. Materials Science-Properties 3
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EE 203	Electrical Engi. Fundamentals II 5	EE 331	Circuit Analysis I ..5	EE 320	Electronics 5
ME 301	Thermodynamics I ..5	ME 302	Thermodynamics II 5	EE 321	Electronics Lab. 1
ME 307	Applied Mech.-Dynamics 5	ME 306	Strength of Materials I 5	EH 208	Literature of the Western World 3
MH 402	Engin. Math. I 5	ME 308	ME Laboratory I 1	ME 313	Fluid Mechanics 5
		ME 335	Engi. Mat. Science-Physical Metallurgy 4	ME 309	Materials Testing Laboratory 1
				ME 316	Strength of Materials II 5

SENIOR YEAR

ME 439	Machine Design I 4	ME 410	Power Plants 5	ME 421	Heat Transfer 5
ME 412	I. C. Engines 5	°SP 305	Public Speaking 3	ME 424	ME Laboratory IV ..2
ME 427	Mech. Vibrations 5	ME 411	ME Laboratory III ..2		Technical Elective ..5
ME 311	ME Laboratory II 1		Technical Elective ..5	ME 440	Machine Design II ..4
	Technical Elective ..5		°°Electives 6		°°Elective 3

Total—240 quarter hours

° Six hours of advanced ROTC may be substituted for SP 305, and three additional hours approved by the Department Head.

°° Courses used for electives must be selected from the list of Humanistic-Social Studies, subject to approval of the Department Head.

SUGGESTED TECHNICAL ELECTIVES

In addition to the subjects listed below, other subjects may be used as technical electives upon approval of the Head of the Department and the Dean of Engineering.

CE 304	Theory of Structures I 5	ME 441	Engineering Systems I 5
CE 305	Sanitary Engineering I 5	IM 412	Engineering Economy 5
CE 402	Intermediate Structures 5	ME 414	Turbomachines 5
CE 404	Reinforced Concrete 5	ME 425	Gas and Steam Turbines 5
CN 440	Nuclear Engineering 5	ME 426	Steam Turbines 5
EG 306	Advanced Graphics for Engineers 3	ME 428	Air Conditioning and Refrigeration ..5
ME 430	Internal Combustion Engine Prob. ..5	ME 442	Engineering Systems II 5
ME 432	Automatic Controls 5	ME 450	Special Problems 1-5
ME 436	Engineering Materials Science-Ferrous Metallurgy 5	MH 403	Engineering Mathematics II or
		MH 404	Engineering Mathematics III or
ME 437	Engineering Materials Science-Nonferrous Metallurgy 5	MH 460	Numerical Analysis I 5

Textile Technology

The Department of Textile Technology, housed in the Textile Building, is equipped with full-size machinery of a complete textile mill for the manufacture of a wide variety of fabrics from the processing of the raw material to the weaving of the finished product. The facilities also include laboratories for bleaching, dyeing, finishing, and the physical and chemical testing of fibers and fabrics.

The textile industry is now the largest industry in Alabama, comprising more than 25 per cent of the total industrial working force in the State. The greater portion of the textile industry, making yarn on the cotton system, is now located in the South and Southeast. In the Southern Region alone, there are some 1500 plants which process cotton, rayon, nylon, wool, and paper and an almost unlimited number of finished products. The industry is growing rapidly in all branches.

The size and diversity of the textile and allied industries, including manufacturers of textile machinery and equipment, chemicals and dyestuffs, research laboratories, textile supply and sales houses, afford unusual opportunities for college-trained men and women. Recent developments are opening new fields of employment in research and development and in the processing of new fibers. The need for college graduates in textile technology has never

been greater than at the present time, nor is the demand likely to be met within the next several years.

The Department of Textile Technology offers two curricula to prepare students for all branches of the industry. The textile courses in these curricula are combined with courses offered by other departments of the University to provide basic instruction in the fundamental sciences, engineering, and technological subjects, and the humanistic-social studies. The two curricula are:

Textile Management. – The curriculum in Textile Management is designed to prepare the student for production, administrative, and managerial positions in the textile and allied industries. Emphasis is placed on production and operational functions and the humanistic-social studies with the inclusion of textile technological subjects. Students are permitted in their junior and senior year to major in production, sales, or design according to their interests and professional needs.

Textile Science. – The curriculum in Textile Science is designed to train men and women in the basic sciences with majors in Textile Chemistry and Textile Physics. It includes basic engineering sciences, humanistic-social studies, and textile technological subjects needed for a well-rounded training in the textile industry. It prepares students for positions in textile research, graduate study, and various industries related to textile chemistry, dye stuffs, synthetic fibers and yarn production.

The Alabama textile industry cooperates with the Department of Textile Technology by assisting worthy young men and women to obtain a college education through the Cooperative Education Program, which is described on page 110 of this catalog.

The Department of Textile Technology is organized and equipped to conduct applied and fundamental research. In cooperation with the Auburn Research Foundation, the Engineering Experiment Station, and other departments of the University, the Department of Textile Technology desires to serve the textile industry of the region through the full utilization of its facilities.

Curriculum in Textile Management (TM)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	CH 103	General Chemistry ..4	CH 104	General Chemistry ..4
HY 107	United States Hist. 5	CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1
MH 107	College Algebra 5	EH 102	English Comp. 5	EH 108	Classical Literature ..5
TT 101	Intr. to Textiles 1	MH 108	Math. of Finance 5	MH 127	Mathematical Stat. ..5
MS	Military Training 1	IL 103	Machine Tool Lab. ..1	MS	Military Training 1
PE	Physical Education ..1	MS	Military Training 1	PE	Physical Education ..1
		PE	Physical Education ..1		

SOPHOMORE YEAR

HY 206	U.S. Government 5	PG 211	General Psychology 5	EC 200	General Economics ..5
SY 201	Intro. to Sociology ..5	PS 205	Introductory Physics 5	PS 206	Intr. Physics 5
TT 210	Fiber Processing 5	TT 220	Weaving & Design ..5	TT 211	Yarn Mfg. I 5
TT 304	Textile Fibers 2	EG 102	Engr. Drawing I 2	MS	Military Training 1
MS	Military Training 1	MS	Military Training 1	PE	Physical Education ..1
PE	Physical Education ..1	PE	Physical Education ..1		

JUNIOR YEAR

IM 306	Industrial Mgt. 5	SP 305	Public Speaking 3	EH 345	Bus. & Prof. Writ. ..5
TT 307	Bleaching & Dyeing 5	TT 320	Weaving & Des. II ..5	TT 319	Chemical Testing 2
	Group Elective 5	TT 318	Physical Testing 2	TT 418	Jacquard Weav. & Design 2
	Elective 3		Group Elective 5		Group Elective 5
			Elective 3		Elective 3

SENIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EC 350 Labor Problems 5	EC 442 Personnel Mgt. 5	TT 422 Synthetic Fibers I 5
TT 406 Textile Costing 5	TT 405 Warp Preparation 5	TT 412 Textile Mgt. 3
Group Elective 5	Group Elective 5	TT 431 Fabric Analysis 3
Elective 3	Elective 3	Group Elective 5
		Elective 3

Total—216 quarter hours

All Textile Management students will take the above curriculum with one of the 30 hour group electives below in accordance with interests and professsional needs. Substitutions from either list may be made with approval of the Department Head.

GROUP ELECTIVES

PRODUCTION	SALES	DESIGN
IM 302 Prod. Control 5	EC 213 Engr. Accounting 5	AT 331 History of Paint. & Sculpture 5
IM 310 Methods Engr. 5	EC 331 Principles of Mark. 5	EC 435 Market. Problems 5
IM 402 Quality Control 5	EC 333 Salesmanship 5	EC 404 Office Mgt. 5
TT 317 Dyeing & Finish. 5	EC 341 Business Law 5	HE 315 Textiles 5
TT 321 Weav. & Des. III ..5	EC 432 Advertising 5	HE 415 Hist. of Textiles 5
TT 322 Yarn Mfg. II 5	EC 433 Retail Store Mgt. 5	TT 321 Weav. & Des. III ..5

Curriculum in Textile Science (TS)

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EH 101 English Comp. 5	CH 103 General Chemistry ..4	CH 104 General Chemistry ..4
HY 107 United States Hist. ..5	CH 103L Gen. Chem. Lab. ..1	CH 104L Gen. Chem. Lab. ..1
MH 111 Intr. College Math. 5	EH 102 English Comp. 5	EH 107 Intr. to Lit. 3
IL 103 Machine Tool Lab. ..1	MH 112 Intr. College Math. 5	MH 161 Ana. Geom. & Cal. 5
MS Military Training 1	EG 102 Engr. Draw. I 2	EG 105 Engr. Draw. II 2
PE Physical Education ..1	MS Military Training 1	MS Military Training 1
	PE Physical Education ..1	PE Physical Education ..1
SOPHOMORE YEAR		
MH 262 Analytic Geometry & Calculus 5	MH 263 Analytic Geometry & Calculus 5	MH 264 Analytic Geometry & Calculus 5
PS 201 Physics-Mechanics ..5	PS 202 Phys.-Heat, Sound, & Light 5	PS 203 Phys.-Elect. & Magnetism 5
TT 210 Fiber Processing 5	TT 220 Weav. & Des. I 5	TT 211 Yarn Mfg. I 5
EH 208 Literature of the Western World 3	EC 206 Socio-Economic Foundations 3	ME 202 Engi. Materials Science-Structure 3
MS Military Training 1	MS Military Training 1	MS Military Training 1
PE Physical Education ..1	PE Physical Education ..1	PE Physical Education ..1
JUNIOR YEAR		
EC 200 General Economics ..5	SY 201 Intro. to Sociology ..5	HY 206 U.S. Government 5
TT 307 Bleaching & Dye. ..5	TT 320 Weav. & Des. II 5	ME 205 Appl. Mech.-Stat. 5
TT 304 Textile Fibers 2	TT 318 Physical Testing 2	TT 319 Chemical Testing 2
Group Elective 5	Group Elective 5	Group Elective 5
Elective 3	Elective 3	Elective 3
SENIOR YEAR		
ME 307 Applied Mechanics-Dynamics 5	EH 345 Bus. & Prof. Writ. ..5	SP 231 Public Speaking 5
TT 406 Textile Costing 5	TT 405 Warp Preparation 5	TT 422 Synthetic Fiber I 5
TT 431 Fabric Analysis 3	Group Elective 5	TT 412 Textile Mgt. 3
Group Elective 5	Elective 3	Group Elective 5
Elective 3		Elective 3

Total—234 quarter hours

All Textile Science students will take the above curriculum with one of the 30 hour group electives below in accordance with interest and professional needs. Substitutions may be made with approval of the Department Head.

GROUP ELECTIVES

TEXTILE PHYSICS	TEXTILE CHEMISTRY
EE 304 Electric Circuits 5	CH 105 General Chemistry 3
ME 310 Thermodynamics 5	CH 105L General Chemistry Lab. 2
PS 302 Electronics 5	CH 207 Organic Chemistry 5
PS 304 Applied Spectroscopy 5	CH 208 Organic Chemistry 5
PS 305 Modern Physics 5	CH 316 Physical Chemistry 5
TT 321 Weav. & Design III 5	TT 317 Dyeing & Finishing 5
	TT 426 Synthetic Fibers II 5

School of Home Economics

MARION SPIDLE, *Dean*

THE SCHOOL OF HOME ECONOMICS offers young people a balanced education. The curriculum includes liberal arts, professional, and technical courses. It offers the student preparation for her role as a homemaker, professional education in one of five major subject matter fields and technical education for highly specialized fields. Students in other schools on campus may elect a minor in any of the fields of Home Economics. All courses are open to both men and women students.

When a student enters college she is assigned an advisor from the Home Economics faculty. The advisor serves in a private and personal capacity as well as professional and usually serves until the junior year. When the student decides in which special subject matter field of Home Economics she expects to major, she is assigned an advisor in the field of her specialization. Among other things her advisor will help her decide how to wisely use her elective hours. She may use these electives to strengthen majors or minors (18 quarter hours) in any field that will develop her capacities and fit her for whatever she may choose to do. Some recommended fields for a minor are art, business administration, chemistry, economics, education, foreign languages, journalism, and sociology.

In the junior year, each student is required to make a block schedule of the last two years' work, including recommended minors. This outline must be transmitted to the dean of the school before the student registers for her junior year of work. At this time it is the student's responsibility to reserve a place in one of the Home Management Houses for the appropriate quarter.

A total of 215 credit hours is required for graduation in all majors except Nursing Science. Here the requirement is 162 hours plus residence work in an accredited school of nursing.

The School of Home Economics is divided into subject matter departments. A graduate of this school receives a Bachelor of Science Degree in Home Economics with a major in one of the following:

I. **Clothing and Textiles**
which leads to fields of work in retailing and styling, journalism, teaching, textile testing and research. The elective hours are planned to provide further training in journalism, business administration, education, chemistry, or other subjects required in these various fields.

II. **Foods and Nutrition**
which gives the student opportunities to prepare for service as dieticians in hospitals, colleges, public school lunchrooms, in tea rooms and cafeterias: for food production, preparation with commercial firms, and for service in the many social organizations.

III. **Home Management and Family Economics**
prepares students for positions with Public Utilities, T.V.A., Farmers Home Administration, equipment manufacturers and distributors, and other types of adult education as well as training leaders in all socio-

economic fields covered in Agricultural Extension Service. The program is also designed for full-time homemakers.

IV. Family Life and Early Childhood Education

which prepares students for work in fields in which knowledge of child development and skills in guidance are essential, such as: nursery schools, kindergartens, extended school services, child welfare, parent education programs, and guidance of children in the family. A minor in Education qualifies the student for teaching Home Economics.

V. Nursing Science

which with three years of work on the campus and satisfactory completion of resident work at an accredited school of nursing leads to a B.S. degree and a certificate of a graduate Registered Nurse. It provides a specially valuable background of knowledge of nutrition and homemaking problems combined with nursing for a student interested in public health.

Graduate Work

The School of Home Economics offers work leading to the Master of Science degree and to the professional degree, Master of Home Economics. For further information consult the Home Economics course descriptions and the graduate catalog.

Child Development Laboratories

The School of Home Economics provides three laboratories for the study of child development and human relations, two Nursery Schools for children 3 to 4½ years of age and a Kindergarten for 5-year olds. One nursery school meets from 9:00 a.m. to 12:00 noon, the other from 9:00 a.m. to 1:00 p.m. The Kindergarten is in session from 1:00 to 4:00 p.m. Children admitted to the laboratory schools are selected from the application list according to date of application. Applications should be made by telephoning the Nursery School Office, Auburn University.

Basic Curriculum for All Freshmen and Sophomores in Home Economics (HE)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	CH 103	General Chemistry ..4
HE 100	Freshman Prob. 3	HE 102	Basic Foods & Nutr. 5	CH 103L	Gen. Chem. Lab. ..1
HE 104	Related Art 5	MH 107	College Algebra* 5	EH 253	Lit. in English 5
PE 111	Hygiene 1	PE 112	Hygiene 1	HE 105	Fund. of Clothing ..5
LY 101	Library Science 1	PE	Physical Education ..1	PE 113	Hygiene 1
PE	Physical Education ..1			PE	Physical Education ..1

SOPHOMORE YEAR

CH 104	General Chemistry ..4	CH 203	Organic Chem.** or	HE 202	Meal Management ..5
CH 104L	Gen. Chem. Lab. ..1	HY 208	World History 5	HE 312	Food Science** or
EC 211	Accounting** or	PG 211	Gen. Psychology 5	HE 233	Home Equip. *** 5
HE 205	Clothing for the Family 5	PS 207	Physics 5	VM 210	Physiology 5
SY 201	Sociology 5	SP 305	Public Speaking 3	JM 315	Ag. Journalism 3
HE 207	Intr. Child Dev. 3	PE	Physical Education ..1	PE	Physical Education ..1
PE	Physical Education ..1				

* MH 107 required of all majors—Pr. for CH 103 and 103L.

** Required of Foods and Nutrition majors only.

*** HE 215 to be scheduled by Clothing majors.

Suggested minors in Speech, Journalism or combination of both. (Consult your Advisor before scheduling SP 305 or JM 315.)

Public Speaking, Radio, and Television: SP 231, 273, 331 and 337, or 231, 337, 437 and 385.

News writing, Reporting, Copyreading and Editing and Feature writing: JM 221, 223, 224 and 322.

Combination minor: JM 221, SP 231, or Workshop, JM 322, SP 337 or SP 305.

Curriculum for Majors in Clothing and Textiles

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HE 303 The House 5	EC 200 General Economics ..5	HE 323 Home Mgt. 5
HE 325 Fund. of Retailing ..5	HE 315 Textiles 5	Elective 5
VM 311 Bacteriology 5	Social Sc. Elective or	Prof. Elective 5
HE 372 Nutr. & Health 3	PG 214 Ed. Psychology 5	HE 305 Tailoring 3
	HE 345 Handicrafts 3	

SENIOR YEAR

HE 407 Growth & Dev. of Children 5	HE 425 Hist. of Costume 5	HE 313 Home Furnishing 5
HE 415 History of Textiles ..5	HE 435 Textile Testing 5	HE 405 Creative Costume Design 5
HE 443 Home Mgt. Res. 5	Prof. Elective 5	Prof. Elective 5
HE 431 Senior Seminar 3	Elective 3	Elective 3

Electives must be chosen from one field to make a strong minor; suggested minors are Art, Chemistry, Economics, Education, Journalism, or Textile Technology.

HE 335 Retail Training (8 cr.) must be scheduled by students electing to minor in Retailing.

Total—215 quarter hours

Curriculum for Majors in Foods and Nutrition

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HE 355 Consumer Textiles ..3	EC 200 General Economics ..5	HE 302 Table Service 3
HE 412 Large Quan. Ckry. ..5	HE 332 Nutr. & Diet. I 5	HE 323 Home Mgt. 5
HY 208 World History 5	HE 352 Inst. Organization 3	HE 342 Nutr. & Diet. II 5
Elective 5	VM 311 Bacteriology 5	PG 214 Ed. Psychology or Elective 5

SENIOR YEAR

HE 402 Diet Therapy 5	FL French or German ..5	FL French or German ..5
HE 407 Growth & Dev. of Children 5	HE 322 Food Preservation 3	HE 431 Senior Seminar 3
HE 442 Catering 3	HE 432 Cafeteria Mgt. 5	HE 443 Home Mgt. Res. 5
Elective 5	Elective 5	HE 462 Exp. Cookery 5

Total—215 quarter hours

Curriculum for Majors in Home Management and Family Economics

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EC 200 General Economics or	HE 303 The House 5	HE 407 Child Development ..5
EC 201 Prin. & Problems of Economics 5	HE 345 Handicrafts 3	HE 343 Contemp. Materials & Finishes 5
HE 313 Home Furnishings ..5	VM 311 Bacteriology 5	HE 372 Nutrition & Health ..3
HE 323 Home Management 5	Ed. Psychology or	Elective 5
HE 355 Consumer Textiles ..3	Soc. Sci. Elective 5	

SENIOR YEAR

HE 304 Home & Family Life 3	HE 401 Extension Organization & Methods 5	HE 353 Community & Family Health 3
HE 322 Food Preservation 3	HE 433 Food Equipment 5	HE 417 Child Development ..5
HE 443 Home Management Residence 5	HE 463 Family Economics ..5	HE 431 Senior Seminar 3
HE 453 Consumer and the Market 5	Elective 3	Electives 8
Elective 3		

Total—215 quarter hours

Curriculum for Majors in Family Life and Early Childhood Education

JUNIOR YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
HE 303 The House 5	EC 200 General Economics ..5	HE 323 Home Mgt. 5
HE 407 Growth & Dev. of Children 5	HE 417 Guid. of Children ..5	HE 372 Nutrition & Health ..3
VM 311 Bacteriology 5	HE 313 Home Furnishing 5	PG 214 Ed. Psychology 5
Elective 3	HE 353 Community & Family Health 3	Soc. Sc. Elective 5

SENIOR YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
HE 443	Home Mgt. Res. 5	HE 437	Spec. Prob. in Ch. Dev. & Kinder. Ed. ..5	ED 421	Dev. Understandings of the Natural & Soc. Environment 5
HE 457	Fam. Relationships ..5	HE 452	Food for the Young Child 5	HE 447	Nursery School & Kinder. Procedures ..5
HE 431	Senior Seminar 3		Electives 8	HE 362	Prob. in Community Nutri. 3
	Elective 5				Elective 5

Electives must be chosen to build a strong minor in Economics, Education, Psychology, Sociology, Speech, or Journalism.

Total—215 quarter hours

Curriculum for Majors in Nursing Science (NS)

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
HE 100	Freshman Problems 3	CH 103	General Chemistry ..4	CH 104	General Chemistry ..4
HE 102	Basic Foods & Nutr. 5	CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1
MH 107	College Algebra 5	EH 101	English Comp. 5	EH 102	English Comp. 5
PE 110	Hygiene 3	ZY 101	General Zoology 5	HY 107	United States Hist. 5
PE	Physical Education ..1	HY 205	Current Events 1	LY 101	Library Science 1
		PE	Physical Education ..1	PE	Physical Education ..1

SOPHOMORE YEAR

CH 203	Organic Chemistry ..5	HE 312	Food Science 5	EC 200	General Economics ..5
EH 253	Lit. in English 5	EH 141	Medical Vocabulary 5	PS 207	Physics 5
HE 306	Personal Grooming ..3	SP 305	Public Speaking 3	SY 201	Sociology 5
VM 220	Human Anatomy & Physiology 5	VM 221	Human Anatomy & Physiology 5		Elective 3
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

HE 332	Nutr. & Health 5	HE 342	Nutr. & Dietetics 5	HE 402	Diet Therapy 5
HE 452	Food for the Young Child 5	HE 407	Growth & Dev. of Children 5	HE 417	Guid. of Children 5
VM 311	Gen. Bacteriology 5	PG 211	Gen. Psychology 5	PY 300	Public Health or Elective 5
	Elective 3	HE 352	Inst. Organization 3		Elective 3

NOTE: Upon satisfactory completion of these three years at Auburn University totaling 162 quarter hours and upon the satisfactory completion of residence work at an accredited school of nursing, the student will be recommended for the B.S. degree.

School of Military Science

COLONEL A. G. W. JOHNSON
Commandant and Professor of Military Science

STUDY OF MILITARY SCIENCE at Auburn University dates back to the Civil War period. The Morrill Land Grant Act of 1862 requires that military instruction be furnished to students. Instruction in Military Science is under the supervision of an officer of the Active Army who is detailed as Professor of Military Science. By appointment of the college authorities he is Commandant of the ROTC students. The Professor of Military Science is assisted by a staff of commissioned and non-commissioned officers of the Army. The curriculum in Military Science is divided into two courses, basic and advanced. A description of course requirements is discussed in the following paragraphs.

Basic Course

The basic course consists of a six-quarter block of instruction normally taken during the freshman and sophomore years. During the freshman year classroom instruction is taken all in one quarter, three hours per week, accompanied by two hours of drill per week. This course is given in the Fall, Winter, and Spring Quarters, and one credit hour is allowed. In the quarters wherein classroom instruction is not received, the student attends drill two hours per week, and for each quarter successfully completed, one credit hour may be earned.

In the sophomore year four hours of instruction (two classroom and two drill) are taken each week in three quarters, with one credit hour allowed per quarter.

Advanced Course

The Advanced Course is designed to produce officers for the Army of the United States, both the Active Army and the Reserve. Admission to the Advanced Course is on a best qualified basis. Since the number of applications received usually exceeds the quota allotted to this unit, possession of minimum qualifications does not ensure selection. Successful completion of the advanced course at Auburn University qualifies the student for a commission as 2nd Lieutenant in either the Artillery, Corps of Engineers, Armor, or the Signal Corps branches, USAR. Graduates have been commissioned in other branches from time to time based on special qualifications and the needs of the Army. Students who are designated Distinguished Military Students may apply for a Regular Army commission, if accomplished prior to graduation and designated as a Distinguished Military Graduate. The advanced course consists of a six-quarter course, normally taken during the junior and senior years, designed to familiarize the student with one of the branches mentioned above. Three credit hours are allowed for each quarter of the advanced course. For limitation on credit allowed toward meeting degree requirements, see engineering curricula. Students are paid at the rate of 90 cents per day, not to exceed 595 days, while enrolled in the Advanced Course.

A summer camp of six weeks duration must be attended by the student before he becomes eligible for a commission. Summer camp is normally attended during the summer between the end of the junior and the start of the senior years. While attending summer camp students are paid $78.00 per month. Reimbursement to the students for travel expenses is made at a rate of five cents per mile to and from camp. Uniforms, quarters and rations are furnished by the government during the camp period. The qualifications for the advanced course are:

1. United States citizenship.

2. Be physically qualified in accordance with standards prescribed by the Department of the Army.

3. Not have reached 28 years of age at time of appointment in the U.S. Army Reserve.

4. Have completed appropriate basic training (2 years Basic ROTC) or have equivalent credit in lieu thereof; have at least two (2) academic years to complete prior to graduation.

5. Have minimum overall academic average of 1.0.

6. Be selected by the Professor of Military Science and the President of Auburn University.

7. Execute a written agreement with the Government to complete the two-year Advanced Course training and to attend one Summer Camp (six weeks duration) preferably at the end of the first year of the Advanced Course.

8. Veterans enrolled at Auburn University who have received equivalent credit for six (6) quarters of basic ROTC may apply for the Advanced Course upon completion of the sophomore academic year.

Army ROTC Aviation Program

Certain qualified MS IV cadets may apply for enrollment in the Army ROTC Flight Training Program, subject to quota limitations. This course is conducted at no expense to the student. Participation in the program will not act to cause any reduction in the prescribed MS IV course. The course is an approved CAA standardized flight instruction program consisting of 35 hours ground instruction and 36½ hours flight training. Satisfactory completion of the program of instruction will qualify the graduates for award of a CAA Private Pilot's certificate. Students must agree to an extended period of active duty for three years.

Uniforms and Equipment

All students, both Basic and Advanced, are required to deposit the sum of $30.00 with the Bursar of the University, prior to enrollment in ROTC. They are then furnished a uniform in good condition and other necessary supplies through the ROTC Supply Office. Upon completion of the ROTC course of instruction, or upon withdrawal of the student therefrom, the uniform and other supplies are turned in and the deposit returned to the student, less $1.50 per quarter withheld by the Bursar of the University to cover the cost of cleaning and repair of uniforms, when applicable and to support ROTC activities as follows: Scholarship and marksmanship awards; special apparel and equipment for competitive drill teams and rifle teams; approved travel for drill teams and rifle teams representing Auburn University

and rifle teams representing Auburn University ROTC; uniforms for sponsors; the official Military Ball in an amount not to exceed $.40 per cadet enrolled that quarter.

Distinguished Military Students

The Professor of Military Science may designate as a Distinguished Military Student a person who:

1. Possesses outstanding qualities of leadership, high moral character, and definite aptitude for the military service.

2. Has attained an academic standing in the upper half of his class. An exception may be made only in the case of an individual student whose standing is in the upper 10 per cent of his class in military subjects, or who has shown exceptionally high motivation toward a military career.

3. Has demonstrated his leadership ability through his achievements while participating in recognized campus activities.

4. Has attained a class standing in the upper third of his ROTC class in the Advanced Course, Senior Division, ROTC.

Distinguished Military Students may make application for a commission in the Regular Army any time subsequent to such designation, but not later than the date on which they are designated Distinguished Military Graduates. If accepted they will be commissioned in the Regular Army upon graduation.

Distinguished Military Graduates

The Professor of Military Science may designate as a Distinguished Military Graduate a person who was designated a Distinguished Military Student and who has maintained the high academic standards between the time of such designation and date of commission and graduation.

Selective Service Deferments

Students enrolled in the advanced Army ROTC program will be deferred under the provisions of the Universal Military Training and Service Act, as amended, as follows:

1. Students so deferred are required to sign an ROTC deferment agreement. The provisions of the agreement require the student to complete the basic course, if enrolled therein, to enroll in and complete the advanced course at the proper time, if accepted therefor; and upon completion of the course of instruction therein, to accept a commission, if tendered.

2. The Department concerned will notify the appropriate local Selective Service Board concerning students who have been selected for deferment. Deferment by the local board in such cases is mandatory unless the student has received an order to report for induction. Students dropped from ROTC, not in good scholastic standing, or not considered potential advanced course student, will no longer be deferred.

3. Students who decline to fulfill the terms of their ROTC deferment agreements pertaining to undergraduate work at the institution will be permanently suspended immediately.

School of Naval Science

CAPTAIN F. L. CURTIS, USN
Commanding Officer and Professor of Naval Science

THE NAVAL RESERVE Officers Training Corps is established under authority of Section 22 of the Act of March 4, 1925, as amended (34 U.S. Code, Sup. 821; Public Law 729, 79th Congress, as amended by Public Law 71 and 381, 80th Congress).

A Captain in the Navy or a Colonel in the Marine Corps is assigned as the Professor of Naval Science. He is assisted by commissioned officers and others detailed from the Navy and Marine Corps.

The purpose of NROTC is to provide a steady supply of well-educated junior officers for the line and staff corps of the Regular Navy and to build up a reserve of trained officers who will be ready to serve their country at a moment's notice in a national emergency. NROTC graduates are given equal rank, equal treatment, and equal opportunities with the graduates of the United States Naval Academy.

Types of NROTC Students

Students in the NROTC are of three types:

(a) **Regular NROTC Students** are appointed Midshipmen, USNR. Such Students assume an obligation to make all required summer practice cruises and upon acceptance of an appointment as a commissioned officer in the U.S. Navy or U.S. Marine Corps serve at the pleasure of the President. The Secretary of the Navy establishes criteria for voluntary termination of an officer's status to meet the needs of the naval service. At the present time the required minimum active duty service period of four years has been established by the Secretary of the Navy.

The Regular program briefly described above is one of the most remarkable educational opportunities ever offered. Public Law 729, signed by the President on 13 August 1946, instituted the selection and training of officer candidates for the Navy and Marine Corps in colleges and universities throughout the country. In the annual nation-wide selection of NROTC Students who will be enrolled in college in the Fall of each year, about ten per cent of the quotas will be filled by Navy and Marine Corps enlisted personnel. All others will be chosen directly from civilians from the United States and its territories.

For the Regular student the cost of tuition, fees, and textbooks will be paid by the Government. Necessary uniforms will be provided by the Government and students will receive retainer pay for other expenses during college at the rate of $600 per year. Normally students will attend college for four years. While in college they may take any course leading to a baccalaureate or higher degree except the following: Pre-Medicine, Medicine, Pre-Dental, Dentistry, General Agriculture, Dairy Production, Soils, Wildlife Management, Soil Conservation, Hotel Administration, Anthropology, Pre-Veterinary, Veterinary Medicine, Pre-Theological, Theology, Agronomy, Dairy Manufacturing, Horticulture, Real Estate, Religion, Landscape Architecture, Physical Education, Pharmacy, Music, Art, Law, Poultry Husbandry, Dairy Husbandry, Floriculture, Animal Science, Entomology, Dramatics, Industrial

Arts, Animal Husbandry. Regular NROTC students are required to take, in addition to the requirements of their major, 33 quarter hours of Naval Science; they must complete one year of college mathematics and one year of physics by the end of their sophomore year. Also, in order to strengthen the courses in Principles and Problems of Leadership (NS 412 and NS 413), a minimum of 3 hours in Psychology is required as a prerequisite. Toward meeting this requirement, PG 311 – Behavior of Man, 3 hours, will be scheduled as an additional requirement for all NROTC students to qualify for a commission and must be completed prior to the end of their Junior year. An exception to this rule will be made in the case of NROTC students whose curriculum requires PG 211 – General Psychology, and completion of this course will be considered as meeting requirements as stated above.

They will be required to make two summer cruises and take one summer period of aviation-amphibious indoctrination, lasting from six to eight weeks each, and upon graduation must accept a commission as Ensign, USN, or Second Lieutenant, USMC, if offered. If at the end of four years they do not wish to remain in the regular Navy or Marine Corps, and, in the event of the termination of their commission, they must accept a commission as a Reserve Officer in the United States Navy or the United States Marine Corps, if offered.

Entrance to this Regular program described above is effected through the medium of nation-wide competitive examination given by the Naval Examining Section, during December of each year for selection of NROTC students to enter the Regular program for the following Fall. Application blanks to take the examination and information bulletins describing this program are made available each Fall at all high schools, colleges, and Offices of Naval Officer Procurement. For more complete details, contact the Professor of Naval Science of this university.

(b) Contract NROTC students have the status of civilians who have entered into a mutual contract with the Navy. They are not entitled to the compensation or benefits paid Regular NROTC students except that they are entitled to a uniform issue, payment of commutation of subsistence during their final two years of NROTC training, and practice cruise compensation. Contract NROTC students, if in all respects qualified, are commissioned as Reserve officers in the United States Navy or Marine Corps upon successful completion of the course. They are required to serve on active duty for a period of three years and retain their commission for a total of six years, unless sooner released by the Secretary of the Navy. Students commissioned in the United States Marine Corps may receive commissions as Regular officers, if accepted under current quotas, and will have the same options of service that Regular NROTC students have.

Contract students also will normally remain in college four years. While in the university, a Contract student may take any curriculum which leads to a baccalaureate or higher degree. This does not, however, entitle the student to any delay of active duty requirements after attaining the basic requirements for a baccalaureate degree and commissioning. In addition to the requirements of their major and 33 quarter hours of Naval Science, Contract students must complete satisfactorily by the end of their second year in the program one of the following requirements: (a) Mathematics through trigonometry (in secondary school or college); or (b) One quarter of college mathematics. Contract NROTC students must also meet the same requirement of Psychology as indicated above for Regular NROTC students. Contract students are required to make only one cruise, normally between the junior and senior years. During this training period, Contract students will be paid as prescribed for enlisted

men of the first pay grade of the Navy ($78 per month at present). During their junior and senior years in the NROTC Program, Contract students are eligible to be furnished commutation of subsistence. The amount of this subsistence is approximately $27 per month.

(c) **Naval Science Students:** With the approval of the academic authorities, and with certain exceptions, students disenrolled from the Regular or Contract NROTC programs may be permitted to pursue Naval Science courses for the purpose of fulfilling the University's requirement of six quarters of ROTC. They are not eligible to make NROTC cruises nor to be paid compensation or benefits.

Equipment

Uniforms, Naval Science textbooks, and other equipment necessary to the Navy program will be furnished by the Government to Regular and Contract students. The uniform will be worn only when engaged in drills or other Naval activities prescribed by the Professor of Naval Science.

General Qualifications for Enrollment

In general, each candidate for enrollment in the NROTC must meet the following requirements:

1. Be an unmarried male citizen of the United States, never have been married, and agree to remain unmarried until commissioned or disenrolled.
2. Have attained his 17th birthday on or before July first of the year of enrollment and be of such age that he will not have attained his 25th birthday before July first of the year he will be commissioned (i.e., not over 21 on July first for initial enrollment at the beginning freshman level unless contemplating a curriculum which takes five years to complete, in which case he will not have passed the 20th anniversary of his birth on July first for initial enrollment at the beginning freshman level). The Professor of Naval Science is authorized to waive the minimum age requirement for Contract Students of the freshman class in those cases where he considers the student of sufficient maturity to undertake the Naval Science courses and drills.
3. Be morally qualified and possess officer qualifications and character as evidenced by appearance, scholarship, extra-curricular activities, and record in his home community.
4. Be at least a high school graduate or person of equivalent educational level if selected competitively; or be enrolled in good standing and attending an NROTC institution if selected by the Professor of Naval Science.
5. Be physically qualified in accordance with the current manual of the Medical Department requirements for entrance into the Naval Academy.
6. Any person receiving compensation from the United States Veterans Administration for disability incurred in the naval or military service of the United States, or who has any claim pending under the Bureau on account of such disability, is not eligible for enrollment in the NROTC.
7. A citizen of the insular possessions of the United States, unless he has been legally admitted as a citizen of the United States, is not eligible for membership in NROTC.
8. A Contract student who is also a member of a Naval Reserve Unit is entitled to receive payment on account of subsistence and transportation as an NROTC student concurrently with pay provided for drills performed by a reservist while in an inactive duty status. He may not receive subsistence as a Contract student concurrently with the active or training duty pay of a reservist.

Selective Service Deferments

1. Regular and Contract Students are draft deferred under the Selective Service Extension Act of 1951 from the time of executing their oath of office or contract.

2. NROTC Students dropped from the program become eligible for draft immediately upon separation from the NROTC. In addition, Regular Students are transferred in an enlisted status to the Ready Reserves of the U.S. Naval Reserve to fulfill the remaining period of their six-year military obligation incurred at the time of appointment as Midshipmen, USNR.

3. The Department of Naval Science will keep the appropriate local draft board informed as to the status of each student under paragraphs 1 and 2 above.

4. Students who decline to fulfill the terms of their NROTC deferment agreement pertaining to undergraduate work at the University will be permanently suspended immediately.

Curriculum

The Naval Science Curriculum consists of five hours per week for all courses with exception of the sophomore courses which consist of four hours per week. Two hours each week are spent on practical work or drill. The remaining hours per week are spent in classroom work. The Naval Science subjects carried during the four-year curriculum are listed below.

FIRST YEAR

1st Qtr. Naval Orientation (NS 111)
2nd Qtr. Sea Power (NS 112)
3rd Qtr. Sea Power (NS 113)

SECOND YEAR

1st Qtr. Naval Weapons (NS 211)
2nd Qtr. Naval Weapons (NS 212)
3rd Qtr. Naval Weapons (NS 213)

(U. S. N. Candidates)

THIRD YEAR

1st Qtr. Navigation (NS 311)
2nd Qtr. Navigation and Introduction to Naval Operations (NS 312)
3rd Qtr. Naval Operations (NS 313)

FOURTH YEAR

1st Qtr. Naval Engineering (NS 411)
2nd Qtr. Naval Engineering and Introduction to Principles and Problems of Leadership (NS 412)
3rd Qtr. Principles and Problems of Leadership (NS 413)

(U. S. M. C. Candidates)

THIRD YEAR

1st Qtr. Evolution of the Art of War (NS 321)
2nd Qtr. Evolution of the Art of War (NS 322)
3rd Qtr. Modern Basic Strategy and Tactics (NS 323)

FOURTH YEAR

1st Qtr. Amphibious Warfare Part I (NS 421)
2nd Qtr. Amphibious Warfare Part II (NS 422)
3rd Qtr. Leadership, The Uniform Code of Military Justice (NS 423)

Each of the above subjects carries 3 quarter hours of credit, with the exception of the sophomore courses which carry 2 quarter hours of credit. These hours of credit will be cleared as a part of the prescribed quarterly load in which they are taken, with graduation requirements for NROTC students being increased accordingly.

Distinguished NROTC Graduates

The Professor of Naval Science may designate as a Distinguished NROTC Graduate any candidate who possesses outstanding qualities of leadership, high moral character, a definite aptitude for the naval service, and who has distinguished himself in his chosen academic major.

In order to qualify for this designation, a candidate must achieve an academic standing in his major field equivalent to "graduation with honor" and must also achieve an equivalent standing in aptitude and Naval Science subjects.

School of Pharmacy

SAMUEL TERRY COKER, *Dean*

THE SCHOOL OF PHARMACY is a member in good standing of the American Association of Colleges of Pharmacy, the object of which is to promote pharmaceutical education. It is also fully accredited by the American Council on Pharmaceutical Education, the object of which is to formulate the educational, scientific and professional principles and standards which approved Schools of Pharmacy are expected to meet and maintain.

Opportunities in Pharmacy. – The thorough academic and scientific background provided by the five-year curriculum enables students to pursue a variety of courses. Those interested in business will find retail or wholesale pharmacy suited to their needs, while those with administrative ability are able to go into hospital pharmacy or public health work. If a career in scientific research is desired, the scientific option may be elected by those qualified. Those interested in sales or sales research will find pharmacy an adequate background in qualifying as a sales representative for pharmaceutical manufacturers. Many graduates are in government service as narcotics inspectors, food and drug chemists, and toxicologists. Pharmacy, especially hospital pharmacy, offers a wonderful opportunity for women. These are but a few of the many opportunities that await registered pharmacists of the future.

The Pharmacy Curriculum. – The five-year curriculum leading to the degree of Bachelor of Science in Pharmacy is designed to prepare students for the many and varied opportunities available to registered pharmacists. The curriculum also offers opportunity for students to include cultural subjects helpful in preparing for their role in the social, cultural and political life of the community.

Students are admitted to the curriculum in pharmacy by an Admissions Committee after successfully completing with acceptable grades one of the following prescribed pre-pharmacy programs.

1. **The 1-4 Plan** – includes one year of pre-pharmacy, which may be taken in the first year of the School of Pharmacy at Auburn or any accredited institution offering the prescribed courses. Students taking pre-pharmacy at Auburn will be on the 1-4 plan.

2. **The 2-3 Plan** – includes two years of prescribed pre-pharmacy courses at an accredited institution prior to transferring to Auburn. A minimum of nine quarters is then required in the School of Pharmacy.

After completing the third year, students choose either a professional option in preparation for general practice, including hospital pharmacy, or a scientific option in preparation for industry, medical school, research or teaching. The program of each student under either option must be approved by the advisor and those choosing the scientific option must have the approval of the Dean. Both options will adequately prepare students for State Board examinations. It is hoped that these options will motivate the superior student to achieve an educational level consistent with his ability and interests.

Approved electives should be chosen equally between professional or scientific and the liberal arts subjects.

Students who are qualified and have the prerequisites may take up to ten hours of graduate courses in their fifth year. Such work cannot be applied toward both the undergraduate and graduate degrees. Registration in graduate courses must be approved by the Dean of the Graduate School.

Attention is called to the following regulation of the American Council on Pharmaceutical Education: "No student may graduate from a recognized college or school of pharmacy who has spent less than three scholastic years of nine quarters or six semesters in residence at said college or school." Transfer students will receive no more than 122 quarter hours credit for work completed at this or other institutions in a non-pharmacy curriculum. Students who transfer from colleges or schools of pharmacy approved by the American Council on Pharmaceutical Education will be accepted if they have a 1.0 ("C") average in courses completed at the college or school of pharmacy, as well as an overall average of 1.0 ("C").

Scholarships and Loans. – Information concerning available scholarships and loans may be obtained by contacting the Director of Student Financial Aid, or the Dean, School of Pharmacy, Auburn, University.

Curriculum in Pre-Pharmacy (P-PY)

FIRST YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 103	General Chemistry ..4	CH 104	General Chemistry ..4	BY 205	Pharmaceutical Botany 5
CH 103L	Gen. Chem. Lab. ..1	CH 104L	Gen. Chem. Lab. ..1	CH 105	General Chemistry ..3
EH 101	English Comp. 5	EH 102	English Comp. 5	CH 105L	Gen. Chem. Lab. ..2
MH 111	Intr. College Math. 5	MH 112	Intr. College Math. 5	HY 107	United States Hist. 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

Curriculum in Pharmacy (PY)

SECOND YEAR

CH 206	Quant. Analysis 5	EC 200	Gen. Economics 5	PS 206	General Physics 5
PY 101	Intr. to Pharmacy ..3	PS 205	General Physics 5	PY 102	Pharmaceutical Arithmetic 5
SY 201	Introduction to Sociology, or	ZY 101	General Zoology 5	ZY 102	General Zoology 5
PG 211	Gen. Psychology 5	MS	Military Training 1	MS	Military Training 1
	General Elective 3	PE	Physical Education ..1	PE	Physical Education ..1
MS	Military Training 1				
PE	Physical Education ..1				

THIRD YEAR

CH 207	Organic Chemistry ..5	CH 208	Organic Chemistry ..5	EC 211	Intr. Accounting 5
PY 201	Inorganic Pharmaceutical Chemistry ..5	EH 345	Business & Prof. Writing, or	PY 203	Pharmaceutical Technology 5
VM 200	Gen. Microbiology ..5	EH 390	Advanced Comp. 5	PY 204	Drug Marketing 3
	Approved Elective ..3	PY 202	Pharmaceutical Terminology 2	PY 300	Public Health 5
		VM 204	Pathogenic Microbiology 5		

FOURTH YEAR*

‡CH 301	Biochemistry 5	PY 302	Organic Pharmaceutical Chemistry ..5	PY 304	Pharmaceutical Technology 5
PY 301	Organic Pharmaceutical Chemistry ..5	PY 306	Pharmacognosy I 5	‡PY 307	Pharmacognosy II ..5
‡PY 303	Physical Pharmacy ..5	PY 309	Pharmacology I 5		Approved Elective ..3
	Approved Elective ..3		Approved Elective ..3		Professional Elec. ..5

* Options must be chosen at the beginning of the fourth year. Advanced ROTC may be used as approved electives in the fourth and fifth years.

FIFTH YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
PY 400 Disp. Pharmacy I 5	PY 401 Disp. Pharmacy II ..5	‡PY 402 Disp. Pharmacy III 5
PY 405 Pharmacology II 5	‡PY 404 Chemistry of Nat. Products 5	‡PY 407 Chemotherapeutic Drugs 3
‡PY 408 Pharmaceutical Economics 5	PY 406 Pharmacology III 5	‡PY 414 Pharmaceutical Specialties 3
		PY 415 Pharmaceutical Jurisprudence 2
		Approved Elective ..5

Total—258 quarter hours

‡ With consent of the advisor and approval of the Dean, those electing the scientific option may substitute courses of equal credit for these subjects.

Note: Proficiency in typing required for admission to 5th year.

APPROVED ELECTIVES: PROFESSIONAL OR SCIENTIFIC

PY 205 History of Pharmacy 3
PY 305 Pharmaceutical Assay 5
PY 308 Hospital Pharmacy Administration 3
PY 403 Toxicology 5
PY 409 Applied Hospital Pharmacy 3
PY 410 Advanced Dispensing Pharmacy 5
PY 411 Survey of Mfg. Pharmacy 3
PY 412 Public & Prof. Relations 3
PY 413 Special Problems 1-3
PY 421 Advanced Inorganic Pharmaceutical Chemistry 5
PY 430 Pharmacological Techniques 5
PY 431 Pharmacology IV 5
PY 432 Fundamentals of Bionucleonics 3
PY 440 Histology of Natural Products 3
PY 441 Commercial Pharmacognosy 3
CH 316 Physical Chemistry 5
CH 418-19-20 Biochemistry 5-5-5
ZY 301 Comparative Anatomy 5
ZY 302 Vertebrate Embryology 5

GENERAL ELECTIVES*

BY 101-02 General Botany 5-5
CH 341 Geology 5
EC 102 Principles of Geography 5
EC 212 Introductory Accounting 5
EC 331 Principles of Marketing 5
EC 341 Business Law 5
EC 432 Advertising 5
EH 108 Classical Literature 5
EH 141 Medical Vocabulary 5
EH 304 Technical Writing 5
EH 345 Business & Professional Writing 5
EH 390 Advanced Composition 5
FL 121-122 Introductory French 5-5
FL 151-152 Introductory German 5-5
HE 372 Nutrition & Health 3
HY 206 United States Government 5
HY 207-8 World History 5-5
MH 127 Elementary Mathematical Statistics ..5
MH 251-52 Analytical Geometry & Calculus I, II 5-5
MU 373 Appreciation of Music 3
MU 374 Masterpieces of Music 3
PA 301 Introduction to Philosophy 3
PA 302 Introduction to Ethics 3
PA 307 Scientific Reasoning 5
PA 308 Introduction to Logic 3
PA 350 Philosophy of Science 5
PG 211 General Psychology 5
PG 311 The Behavior of Man 3
SP 305 Public Speaking 3
ST 111 Business Typewriting 5
SY 201 Introduction to Sociology 5

* Additional electives may be taken only with approval of advisor.

School of Science and Literature

ROGER W. ALLEN, *Dean*

THE SCHOOL OF SCIENCE AND LITERATURE is the oldest school of Auburn University and offers work in various lines leading to the Bachelor of Science and Bachelor of Arts degrees. It is the only school on the campus which had its origin when Auburn was a denominational institution. For many years it was known as the Academic Faculty and the work offered was referred to as the General Course. The State of Alabama assumed charge of Auburn in 1872 and the work then offered which is now retained is administered by the School of Science and Literature. Throughout the history of the institution this school has played an important part. It is composed of nine departments in which instruction is offered by more than 175 faculty members.

The School of Science and Literature has a two-fold purpose. As a distinct school coordinate with other schools of the University it offers work designed to equip the student with a broad and liberal education and thereby enable him to care for himself better and to discharge more effectively the duties of a citizen. A second purpose is to function as the service division of the University.

Degree Courses

The Departments of Economics and Sociology, English, Foreign Languages, History and Political Science, Mathematics, Philosophy, Physics, Secretarial Administration, and Speech are in the School of Science and Literature. In general, the curricula offered in this school are based on various combinations of courses presented by these departments, but in some of the curricula certain courses are required which are offered by other schools of the University.

Outlines of all work required in the curricula in Business Administration, Mathematics, Physics, Applied Physics, Pre-Dentistry, Pre-Law, Pre-Medicine, Pre-Veterinary Medicine, Secretarial Administration, and Science and Literature are recorded in detail on pages 140-145 inclusive.

In the other curricula offered in this school the work required in the freshman and sophomore years is recorded on page 139. During the junior and senior years the student must complete a major of seven five-hour courses and two minors of three five-hour courses each or a double minor of six five-hour courses. Any course to be counted in the major and minors must be numbered 200 or above. Required sophomore courses are not counted on the majors and minors. The work constituting the major must be elected from courses offered by one department or by two closely related departments upon the advice of the dean and the heads of the departments concerned. The work composing each minor must be selected from a single department. The major and minors will normally be selected from different departments, but the double minor will be in one department. Other work will be elected upon advice of the dean to meet the total requirement of 108 quarter hours during the junior and senior years.

The head of the department in which the student majors – or someone designated by him – automatically becomes the student's advisor and is charged with the responsibility of outlining the student's major work. The minors are to be selected in consultation with the head of the department in which the student majors, but the heads of the departments in which the student minors will prescribe the work to be completed in those fields. The outline of the work constituting the major and minors must be transmitted to the dean of the school before the student registers for his junior year of work.

A Service Division

One of the very important functions of the School of Science and Literature is to serve the professional schools on the campus. Whatever curriculum a student may elect, whether it be Engineering, Agriculture, Education, Home Economics, or any other, he must take certain fundamental courses in English, mathematics, history, economics, and sometimes physics, foreign languages, public speaking, journalism, etc. All of these courses at Auburn are offered only in the School of Science and Literature, thereby eliminating unnecessary duplication and saving cost. The student who is preparing to become a professional teacher spends a large portion of his time in this school acquiring a fundamental education in the subject matter which he expects ultimately to teach and in broadening his education in general subjects. He takes his professional work in teacher-training in the School of Education. A student entering Auburn University who has not yet decided what particular vocation he desires to pursue will naturally register in the School of Science and Literature and may, if he so elects, transfer later to a technical school in the institution. Courses in other divisions of the institution are open to election by students registered in the School of Science and Literature.

Foreign Language. – In all curricula in this school that require three quarters in a foreign language the work must be in one language.

Co-operative Program in Business Administration, Physics and Applied Physics

Co-operative programs in Business Administration, Physics and Applied Physics are programs of education which offer students in these curricula an opportunity to integrate their academic training with practical experience. Students alternate each quarter between school and a work assignment provided through the Co-operative Coordinator by business, industrial, governmental and banking organizations. For further information, see page 34.

Curriculum in Science and Literature (SL) and Pre-Law (PL)

Students desiring to pursue a curriculum leading to the degree Bachelor of Arts with majors in English, English-Journalism, Foreign Language, History, Philosophy, Speech and Sociology; or a curriculum leading to the degree Bachelor of Science with majors in Biological Sciences, Chemistry, Economics, Mathematics, Physics, and those preparing for Law School should select this curriculum. Prospective majors should consult departmental requirements beginning on page 139. This curriculum is designed to meet the minimum requirements for admission to standard law schools by the end of the sophomore year.

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 102	Prin. of Geography ..5	EH 101	English Comp. 5	EH 102	English Comp. 5
HY 107	United States Hist. 5	MH 112	Intr. College Math. ..5	FL	Foreign Language* 5
MH 111	Intr. College Math. 5		Science (ZY 101 or CH 103, 103L)†		Science (ZY 102 or CH 104, 104L)†
LY 101	Use of Library 1		and †† 5		and †† 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

SOPHOMORE YEAR

FL	Foreign Language ..5	EH 253	Lit. in English 5	‡EC 200	Gen. Economics 5
HY 209	U.S. Federal Gov't ..5	FL	Foreign Language ..5	EH 254	Lit. in English 5
SY 201	Intr. Sociology** 5	HY 210	U.S. State Gov't 5	PG 211	Psychology** 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

For Science and Literature Students

During the junior and senior years the student not in advanced ROTC is to complete Philosophy 301 (3) and Logic 308 (3), seven additional five-hour courses in his major, three additional five-hour courses in each of two minors, five five-hour electives and four three-hour general electives; **211 quarter credit hours are normally required for graduation.** All major and minor courses are to be numbered 200 or above. See available majors and minors below.

Language and Literature Major

JUNIOR AND SENIOR YEARS

The majors available in the Language-Literature Groups are as follows: English***, Journalism and English***, Foreign Language, Philosophy, Speech†††.

Students who choose one of the above majors will select two minors from the following: Art, Botany, Chemistry, Dramatics, Economics, Education, English, Foreign Languages, History, Home Economics, Journalism, Mathematics, Music, Philosophy, Physical Education, Physics, Psychology, related subjects in Agriculture or Engineering, Secretarial Administration, Sociology, Speech, Zoology.

Science Major†

JUNIOR AND SENIOR YEARS

The majors available in the Science Group are as follows: Biological Sciences, Chemistry, Mathematics††††, Physics.

Students who choose a Science Major will select two minors from the following: Art, Botany, Chemistry, Dramatics, Economics, Education, English, Foreign Languages, History, Home Economics, Journalism, Mathematics, Music, Philosophy, Physical Education, Physics, Psychology, related subjects in Agriculture or Engineering, Secretarial Administration, Sociology, Speech, Zoology.

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† Majors in Mathematics or Physical Sciences will take CH 103-103L and CH 104-104L.

†† Must include Laboratory.

‡ Economics majors take EC 201.

* Students who have credit for two high school units in a foreign language must begin third quarter's work in that language or take another language.

** Science majors will take two quarters of Science here but Sociology and Psychology are to be taken during the Junior or Senior Year.

*** For special requirements for English and English-Journalism majors, see Description of Courses.

††† For special requirements for Speech majors, see Description of Courses.

†††† For special requirements for Mathematics majors, see Description of Courses.

Social Science Major

JUNIOR AND SENIOR YEARS

The majors available in the Social Science Group are as follows: Economics***, History****, Sociology**.

Students who choose one of the above majors will select two minors from the following: Art, Botany, Chemistry, Dramatics, Economics, Education, English, Foreign Languages, History, Home Economics, Journalism, Mathematics, Music, Philosophy, Physical Education, Physics, Psychology, Secretarial Administration, Sociology, Speech, Zoology, related subjects in Agriculture or Engineering.

For Pre-Law Students

By the end of the junior year the student preparing for a career in law and desiring to qualify for the A.B. or B.S. degree (awarded at the end of the first year in Law School after completion of three years in this curriculum at Auburn), must have satisfactorily completed Philosophy 301 (3), Logic 308 (3), and the following five quarter-hour courses: Public Speaking 231, Argumentation and Debate 283, Accounting 211, Accounting 212 and History of England 472. In addition, selection from the following five-hour courses is strongly recommended for completion of the Junior year: Typewriting 111°, Advanced Composition 390, Statistics 345, Corporation Finance 463, Public Finance 465, Political Science 407, Social Problems 202 and Cultural Anthropology 203. Those students wishing to obtain the bachelor's degree at Auburn before entering Law School should continue this curriculum and complete the usual major, minors and electives described above for Science and Literature students.

Business Administration (BA)

This program is designed to train for careers in the business world and government. During the first two years, emphasis is given to a liberal arts program of work which is so essential to all college graduates. The four-year curriculum gives the student a systematic introduction to and understanding of the major areas of Accounting, Management, Marketing, Finance and Banking, Statistics, Personnel Management, Industrial Relations and Economics. Furthermore, during the junior and seniors years, opportunity is given the student to major or concentrate in a particular area of business, thereby qualifying him for more specialized work in business or government. Business management at top, middle and lower levels, increasingly demands the services of the business administration- and commerce-trained graduate.

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	EH 102	English Comp. 5	EC 103	Econ. Geography ..5
HY 107	U.S. History 5	FL 121, 131 or 151, or		FL 122, 132 or 152, or	
MH 111	Intr. College Math. 5		Science (ZY 101 or CH 103) and †† 5		Science (ZY 102 or CH 104) and †† 5
LY 101	Use of Library 1	MH 112	Intr. College Math. 5	SA 111	Typewriting° 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

° Not open to students having one H.S. unit in typing. In such cases an Economic Group Elective may be substituted.

** For special requirements for Sociology majors, see Description of Courses.

*** Economic Problems, EC 202, Statistics, EC 345, and Money and Banking, EC 360, are required for Economics majors.

**** For special requirements for History majors, see Description of Courses.

†† Must include Laboratory.

SOPHOMORE YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EC 205	Bus. Org. & Mgt. 5	EC 201	Prin. of Economics ..5	EC 202	Econ. Problems 5
EC 211	Intr. Accounting 5	EC 212	Intr. Accounting 5	EH 253	Lit. in English 5
SP 231	Public Speaking 5	HY 206	U.S. Government 5	PG 211	Gen. Psychology or
MS	Military Training 1	MS	Military Training 1	SY 201	Intr. to Sociology ..5
PE	Physical Education ..1	PE	Physical Education ..1	MS	Military Training 1
				PE	Physical Education ..1

JUNIOR YEAR

EC 331	Marketing Principles 5	EC 341	Business Law 5	EC 350	Labor Problems 5
EC 345	Statistics 5		Group Elective 5	EH 345	Bus. & Prof. Wrtg. ..5
EC 360	Money & Banking ..5		Elective** 5		Elective** 5
‡PA 301	Intr. to Philosophy 3	‡PA 308	Intr. to Logic 3		Elective 3

SENIOR YEAR

EC 465	Public Finance or		Group Elective 5	EC 463	Corp. Finance 5
EC 446	Business Cycles 5		Group Elective 5		Group Elective 5
	Group Elective 5		Elective** 5		Elective** 5
	Elective** 5		Elective 3		Elective 3
	Elective 3				

Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

** Electives chosen in consultation with advisor.

‡ Not required of students in Advanced ROTC Program.

GROUP ELECTIVES

EC 357 Economic History of Europe
EC 358 Economic History of the United States
EC 304 Geography of South America
EC 305 Geography of North America
EC 306 Geography of Europe
EC 307 Geography of Asia
EC 308 Geography of Africa
EC 311-12 Intermediate Accounting
EC 314 Income Tax Accounting
EC 321 Property Insurance
EC 322 Life Insurance
EC 323 Real Estate
EC 332 Credits and Collections
EC 333 Salesmanship
EC 342 Business Law
EC 402 American Industries
EC 404 Office Management
EC 405 Cultural Geography of the World
EC 407 World Resources
EC 411-12 Cost Accounting
EC 414 Adv. Income Tax Accounting
EC 416 Auditing
EC 417-18 Advanced Accounting
EC 419 Governmental Accounting
EC 432 Advertising
EC 433 Retail Store Management
EC 434 Purchasing
EC 435 Advanced Marketing
EC 436 Marketing and Business Research
EC 437 Sales Management
EC 438 Retail Merchandising
EC 442 Personnel Management
EC 444 Labor Legislation
EC 445 Industrial Relations
EC 446 Business Cycles
EC 449 Adv. Personnel Administration
EC 450 Job Evaluation and Incentive Systems
EC 451 Intermediate Economic Theory
EC 452 Comparative Economic Systems
EC 460 Economic Development of the South
EC 462 Monetary Theory and Policy
EC 464 Investments
EC 465 Public Finance
EC 471 Foreign Trade
EC 472 Economics of Transportation
EC 473 Traffic Management
EC 474 Advanced Statistics
EC 476 Motor Transportation
EC 480 Business Policies and Administration
IM 306 Industrial Management
IM 310 Methods Engineering
PA 440 American Philosophy
PG 461 Industrial Psychology
SA 302 Office Machines
SY 201 Introductory Sociology
SY 401 Population
SY 408 Industrial Sociology

Secretarial Administration (SA)

The course in Secretarial Administration is designed to meet the needs of those who plan to fit themselves for secretarial positions in business, government and professional offices. The program of work outlined leads to the degree of Bachelor of Science.

In order to determine placement in the proper course personal conferences with those students who have had shorthand and typewriting elsewhere will be held during registration.

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EC 102 Prin. of Geog. or	EH 102 English Comp. 5	FL 121, 131 or 151 5
EC 103 Intr. Econ. Geog. ..5	MH 111 Intr. College Math. 5	MH 112 Intr. Col. Math. or
EH 101 English Comp. 5	SA 101 Secretarial Science* 5	EH 108 Classical Lit. 5
HY 107 U.S. History 5	PE 112 Hygiene 1	SA 102 Secretarial Science ..5
LY 101 Use of Library 1	PE Physical Education ..1	PE 113 Hygiene 1
PE 111 Hygiene 1		PE Physical Education ..1
PE Physical Education ..1		

SOPHOMORE YEAR

SA 203 Secretarial Science ..5	EC 211 Intr. Accounting 5	EC 212 Intr. Accounting 5
EC 200 Gen. Economics or	PG 211 Psychology 5	HY 206 U.S. Government ...5
EC 201 Prin. of Economics ..5	SA 204 Secretarial Science ..5	SP 231 Public Speaking 5
FL 122, 132 or 152 5	HY 205 Current Events 1	SA 200 Filing 1
HY 205 Current Events 1	PE Physical Education ..1	PE Physical Education ..1
PE Physical Education ..1		

JUNIOR YEAR

EC 341 Business Law 5	SY 201 Intr. Sociology 5	SA 301 Dictation 5
EC 345 Statistics 5	SA 300 Sec. Procedure 5	EH 345 Bus. & Professional
SA 302 Office Machines 5	SA 303 Adv. Office Mach. ..5	Writing 5
PA 301 Intr. to Philosophy 3	PA 308 Intr. to Logic or	Elective 5
	PA 302 Ethics 3	Elective 3

SENIOR YEAR

EC 404 Office Mgt. 5	EC 442 Personnel Mgt. 5	SA 402 Office Appren-
Elective 5	SA 401 Dictation 5	ticeship 5
Elective 5	Elective 5	Group Elective** 5
Elective 3	Elective 3	Group Elective** 5
		Elective 3

Total—211 quarter hours

* Open to SA majors and others who have had SA 111 or equivalent typing credit.
** Refer to page 141 for Group Electives.

Mathematics (MH)

This curriculum is designed to prepare students for graduate study and eventual careers as Mathematicians.

FRESHMAN YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
EH 101 English Comp. 5	EH 102 English Comp. 5	EH 108 Classical Literature 5
FL 121 French** 5	FL 122 Elem. French** 5	FL 221 Inter. French** 5
MH 111 Intr. College Math. 5	MH 112 Intr. College Math. 5	MH 161 Anal. Geom. & Cal. 5
LY 101 Use of Library 1	MS Military Training 1	MS Military Training 1
MS Military Training 1	PE Physical Education ..1	PE Physical Education ..1
PE Physical Education ..1		

SOPHOMORE YEAR

EH 253 Lit. in English 5	EH 254 Lit. in English 5	HY 207 World History 5
MH 262 Anal. Geom. & Cal. 5	MH 263 Anal. Geom. & Cal. 5	MH 264 Anal. Geom. & Cal. 5
PS 201 Mechanics 5	PS 202 Heat, Light,	PS 203 Elec. & Magnetism 5
MS Military Training 1	& Sound 5	MS Military Training 1
PE Physical Education ..1	MS Military Training 1	PE Physical Education ..1
	PE Physical Education ..1	

JUNIOR YEAR

FL 151 Elem. German** 5	FL 152 Elem. German** 5	FL 251 Inter. German** 5
HY 208 World History 5	MH 420 Adv. Calculus 5	MH 421 Adv. Calculus 5
MH 331 Higher Algebra 5	MH 431 Intr. Modern	Philosophy Elective 5
PA 301 Intr. to Phil.* 3	Algebra 5	Elective 3
	Elective 3	

SENIOR YEAR

MH 428 Lin. Diff. Systems ..5	MH 443 Topics on Geom. or	MH Elective 1 5
**Elective 2 Sequence 5	MH 444 Higher Geometry 5	**Elective 2 Sequence 5
Elective 3 5	**Elective 2 Sequence 5	Elective 3 5
Elective 3	Elective 3 5	Elective 3
	Elective 3	

Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

* Not required of students in advanced ROTC programs.

** The order in which these sequences are taken may be interchanged. The French sequence may be replaced by 15 hours of either Russian or Italian. Students who have credit for two high school units in a foreign language must begin the third quarter of work in that language or take another language.

1. MH Elective—to be taken from MH 435, 437, 443, 444, or 447.

2. These electives are to include any one of the following sequences: (a) PS 305 Introduction to Modern Physics, PS 401 Theoretical Physics I (mech.), PS 402 Theoretical Physics II (mech.), (b) ZY 101, ZY 102 General Zoology, ZY 300 Genetics or BY 401 Princ. of Biometry, (c) BY 101, BY 102 General Botany, ZY 300 Genetics or BY 401 Princ. of Biometry, (d) CH 103, 103L, 104, 104L, and 105, 105L, General Chemistry, or CH 207 Organic Chemistry.

3. The student must consult with the Department of Mathematics on the selection of these electives. They are used to meet the needs and interests of the individual students in line with fulfilling the objectives of this curriculum. They may be taken in the biological, physical or social sciences, literature, languages, history, education or mathematics.

Physics (PS)

This curriculum is designed to prepare students for graduate study and eventual careers in research and teaching in Physics. Equipment is available for advanced laboratory work and research in several outstanding fields.

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	Chemistry 5	CH 112	Chemistry 5	CH 113	Chemistry 5
HY 107	U.S. History 5	EH 101	English Comp. 5	EH 102	English Comp. 5
MH 160	Intr. College Math.* 5	MH 161	Anal. Geom. & Cal. 5	MH 262	Anal. Geom. & Cal. 5
LY 101	Use of Library 1	MS	Military Training 1	MS	Military Training 1
MS	Military Training 1	PE	Physical Education ..1	PE	Physical Education ..1
PE	Physical Education ..1				

SOPHOMORE YEAR

EH 253	Lit. in English 5	FL 121	Elem. French** 5	FL 122	Elem. French** 5
MH 263	Anal. Geom. & Cal. 5	MH 264	Anal. Geom. & Cal. 5	MH 361	Diff. Equations 5
PS 201	Mechanics 5	PS 202	Heat, Sound, Light 5	PS 203	Elec. and Mag. 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1

JUNIOR YEAR

FL 151	Elem. German** 5	FL 152	Elem. German** 5	CH 206	Quant. Analysis 5
MH 402	Eng. Math. I 5	PS 302	Electronics 5	PS 305	Modern Physics 5
PS 301	Intr. Elec. & Mag. ..5		Elective*** 5		Group Elective 5
	Elective 3		Elective 3		Elective 3

SENIOR YEAR

CH 407	Physical Chemistry ..5	CH 408	Physical Chemistry ..5	PS 404	Thermodynamics 5
PS 401	Theoretical Phys. I 5	PS 303	Optics 5		Group Elective 5
PS 405	Nuclear Physics 5	PS 402	Theoretical Phys. II 5		Elective 5
	Elective 3		Elective 3		Elective 3

Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

* Only five hours credit allowed toward graduation for MH 111-112 if sequence MH 111-112 is taken instead of MH 160.

** Students who have credit for two high school units in a foreign language must begin the third quarter of work in that language or take another language.

*** Students planning to do graduate work should elect MH 404.

GROUP ELECTIVES

MH 403-4 Engineering Mathematics II and III
MH 460 Numerical Analysis I
PS 304 Applied Spectroscopy
PS 409 Introduction to Reactor Physics I
PS 410 Introduction to Reactor Physics II
PS 413 Introduction to X-Ray Crystallography
PS 414 Electron Optics & Microscopy
PS 421 Advanced Electronic Circuits

Applied Physics (APS)

This curriculum provides a thorough foundation in physics and sufficient training in mathematics and related sciences to enable the graduates to enter industrial and governmental research laboratories. Many graduates in this curriculum elect to pursue further training for advanced degrees in Physics.

During the junior and senior years, thirty-five quarter hours are designated as technical electives. At least twenty of these quarter hours are to be taken in one related science. The remaining fifteen quarter hours may be chosen from courses not required in physics, mathematics, or the related science.

Following the curriculum outline is a list of technical electives in the related sciences.

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
CH 111	Chemistry 5	CH 112	Chemistry 5	CH 113	Chemistry 5
HY 107	U.S. History 5	EH 101	English Comp. 5	EH 102	English Comp. 5
MH 160	Intr. College Math.* 5	MH 161	Anal. Geom. & Cal. 5	MH 262	Anal. Geom. & Cal. 5
LY 101	Use of Library 1	EG 102	Eng. Drawing 2	IL 103	Mach. Tool Lab. 1
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
	18		19		18

SOPHOMORE YEAR

EH 253	Lit. in English 5	ME 307	Dynamics** 5	ME 306	Strength of Materials** 5
MH 263	Anal. Geom. & Cal. 5	MH 264	Anal. Geom. & Cal. 5	MH 361	Diff. Equations 5
PS 201	Mechanics 5	PS 202	Heat, Light, and Sound 5	PS 203	Elec. & Mag. 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education ..1	PE	Physical Education ..1	PE	Physical Education ..1
	17		17		17

JUNIOR YEAR

MH 402	Eng. Math. I 5	PS 305	Modern Physics 5	PS 302	Electronics 5
PS 301	Inter. Electricity & Magnetism 5	PS 404	Thermodynamics 5	PS 303	Optics 5
	***Technical Elective ..5	EE 331	Circuit Analysis I 5		Technical Elective ..5
			****Elective 3		****Elective 3
	15		18		18

SENIOR YEAR

PS 401	Theoretical Phys. I ..5	PS 402	Theoretical Phys. II 5	PS 413	X-rays & Crys. Struc. 5
PS 405	Nuclear Physics 5		Technical Elective ..5		Technical Elective ..5
	Technical Elective ..5		Technical Elective ..5		Technical Elective ..5
	****Elective 3		****Elective 3		****Elective 3
	18		18		18

Total—211 quarter hours

* Only 5 hours of credit are allowed toward graduation for MH 111-112 if the sequence MH 111-112 is taken instead of MH 160.

** Students taking related courses in chemistry will take CH 207 (Organic Chemistry) instead of ME 307 and CH 208 (Organic Chemistry) instead of ME 306.

*** Students taking advanced ROTC may schedule their military courses within the fifteen hours of free electives and one of the technical electives.

**** Students anticipating graduate work should use 10 hours of technical electives and an equal number of free electives to complete at least 10 hours in each of two foreign languages: French, German or Russian. Otherwise, his free elective credits (up to 15 hours) should be earned in the areas of Philosophy, Literature, History, the Social Sciences or the Fine Arts.

TECHNICAL ELECTIVES

In parenthesis following a course title are numbers indicating when the course should be taken. Examples: (3-2) means the course should be taken during the junior year in the second quarter.

AE 301	Basic Aerodynamics 5	ME 202	Materials of Engineering 3
AE 404	High Speed Aerodynamics 5	ME 206	Properties of Materials 3
AE 413	Theoretical Aerodynamics 5	ME 313	Fluid Mechanics ....(3-3) 5
CH 206	Quant. Analysis ....(3-3) 5	ME 335	Metallurgy 5
CH 305	Organic Chemistry 5	ME 421	Heat Transfer ....(4-1) 5
CH 407	Physical Chemistry ....(4-1) 5	ME 441	Engineering Systems I ....(4-2) 5
CH 408	Physical Chemistry ....(4-2) 5	ME 442	Engineering Systems II ....(4-3) 5
CH 409	Physical Chemistry 5	MH 404	Engineering Mathematics III 5
CH 410	Intermediate Inorganic Chem. (3-1) 5	MH 428	Linear Differential Systems 5
CH 412	Chemical Thermodynamics 5	MH 460	Computer Systems 5
EE 332	Circuit Analysis ....(3-3) 5	PS 304	Applied Spectroscopy 5
EE 430	Radio Transmission Line ....(4-1) 5	PS 409	Intr. to Reactor Physics I 5
EE 442	Ind. Electronics and Control Cir. 5	PS 410	Intr. to Reactor Physics II 5
EE 443	Transistor Electronics 5	PS 414	Electron Optics 5
EE 444	Fund. of Digital Computers 5	PS 470	Health Physics 5
EE 445	Nuclear Instrumentation 5		
EE 448	Communications Eng. II ....(4-2) 5		

Curriculum in Pre-Professional Science

For Students in Pre-Medicine (PM), Pre-Dentistry (PD) and Pre-Veterinary Medicine (PV)

The first two years of this curriculum meet the minimum course requirements for admission to the Auburn School of Veterinary Medicine. Refer to page 146 for particulars. Standard schools of dentistry and medicine require at least two and three years, respectively. Each student is urged to continue an additional one or two years beyond the bare minimum demands of the professional school of his choice, however. The Bachelor of Science degree is awarded to those completing the four-year curriculum before entering professional school. Students admitted to dental, medical or veterinary medical school before graduation, but after having completed the first three years of this curriculum at Auburn and including General Chemistry 105 and 105L, may transfer credits for the first year in professional school back to Auburn and receive the B.S. degree.

FRESHMAN YEAR

FIRST QUARTER		SECOND QUARTER		THIRD QUARTER	
EH 101	English Comp. 5	CH 103	General Chemistry .. 4	CH 104	General Chemistry .. 4
MH 111	Intr. College Math. 5	CH 103L	Gen. Chem. Lab. .. 1	CH 104L	Gen. Chem. Lab. .. 1
ZY 101	Zoology 5	EH 102	English Comp. 5	HY 107	U.S. History 5
LY 101	Use of Library 1	ZY 102	Zoology 5	MH 112	Intr. College Math. 5
MS	Military Training 1	MS	Military Training 1	MS	Military Training 1
PE	Physical Education .. 1	PE	Physical Education .. 1	PE	Physical Education .. 1

SOPHOMORE YEAR

BY 101	General Botany 5	CH 207	Organic Chemistry .. 5	CH 208	Organic Chemistry .. 5
PS 205	Physics 5	HY 206	U.S. Government	EH 141	Medical Vocab. 5
CH 105	General Chemistry .. 3		or	PS 210	Physics
CH 105L	Gen. Chem. Lab. .. 2	PH 202	Veterinary Poul.* 5		or
	or	PS 206	Physics 5	AH 204	Animal Nutrition* .. 5
AH 200	Intr. An. Husb.* 5	MS	Military Training 1	MS	Military Training 1
MS	Military Training 1	PE	Physical Education .. 1	PE	Physical Education .. 1
PE	Physical Education .. 1				

JUNIOR YEAR

EH 345	Business and Prof.	CH 206	Quant. Analysis 5	CH 316	Physical Chemistry .. 5
	Writing 5	FL 152	German** 5	FL 251	German** 5
FL 151	German** 5	SY 201	Sociology 5	ZY 302	Vertebrate Embry. .. 5
ZY 301	Comp. Anatomy 5	‡PA 308	Intr. to Logic 3		Elective 3
‡PA 301	Intr. to Philosophy 3	HY 305	Current Events*** .. 1	HY 305	Current Events*** .. 1
HY 305	Current Events*** .. 1				

SENIOR YEAR

EC 200	Gen. Economics 5	PG 211	General Psychology 5	SP 231	Public Speaking 5
	Group Elective 5		Group Elective 5		Group Elective 5
	Group Elective 5		Group Elective 5		Group Elective 5
	Elective 3		Elective 3		Elective 3

Total—211 quarter hours

Women students will take Hygiene in the Freshman year and Current Events in the Sophomore year in lieu of Military Training.

* To be taken by pre-veterinary students but not by pre-medical or pre-dental students.

** Students who have credit for two high school units in German must begin the third quarter's work in that language or take another language.

*** Not required for graduation but urged in preparation for Medical and Dental Aptitude tests. Three quarters of Current Events recommended throughout Junior year and may be used in place of a three-hour elective.

‡ Not required of students in Advanced ROTC Program.

GROUP ELECTIVES

CH 301 Biochemistry
CH 305 Organic Chemistry
EC 341-2 Business Law
EH 253 Literature in English
EH 357-8 American Literature
FL 252 Intermediate German
HY 207-8 World History
MH Advanced Mathematics
PG 435 Abnormal Psychology
SY 304 Minority Groups
SY 301 Sociology of the Family
VM 200 General Microbiology
VM 220-1 Human Anatomy and Physiology
ZY 308 Micrology
ZY 300 Genetics
ZY 404 Medical Entomology
ZY 409 Histology

School of Veterinary Medicine

J. E. Greene, *Dean*

THE SCHOOL OF VETERINARY MEDICINE offers a fully accredited program of training leading to the degree of Doctor of Veterinary Medicine. Completion of the curriculum requires four years in the professional school after completion of the pre-professional curriculum which requires a minimum of two years.

An expanding program of research contributes to the advancement of knowledge in the prevention and control of animal diseases.

Non-curricular Educational Programs. — All students enrolled in veterinary medicine are eligible for membership in the Student Chapter of the American Veterinary Medical Association.

Each year the faculty presents a four-day conference for graduate veterinarians and students. Demonstrations presented are shown to small groups by means of closed circuit television. Speakers on these programs are men of wide experience and prominence in specialized fields of veterinary medicine.

Post-graduate short courses are presented each year. Announcements are made prior to each course. The instruction is given by specialists in the various fields of veterinary medicine.

Admission

Two years of general college work, with a minimum scholastic average of 1.25 on all required courses, is required for admission. A grade of D on any required course will not be accepted. The Committee on Admissions of the School of Veterinary Medicine may require a personal interview with any applicant and may also require a reading comprehension test, or an examination on any required course. The School of Science and Literature offers a two-year Pre-Veterinary Medicine Curriculum which is available to residents of Alabama. Applications for admission to the pre-veterinary course should be made directly to the Admissions Officer, Auburn University.

Residents of states other than Alabama should complete the pre-professional requirements at institutions within their home state, since they are not eligible for admission to the pre-professional curriculum at Auburn University. Such work should include 10 quarter hours of inorganic chemistry, 10 quarter hours of organic chemistry, 10 quarter hours of physics, 5 quarter hours of botany, 10 quarter hours of zoology, 10 quarter hours of English Composition, 10 quarter hours of introductory college mathematics, 5 quarter hours of poultry science, 5 quarter hours of animal nutrition, 5 quarter hours of introductory animal science, 5 quarter hours of American history, and 5 quarter hours of medical vocabulary. Ten quarter hours of Latin or modern language may be substituted for medical vocabulary, or this course may be taken through the Correspondence Study Department, Auburn University. Three semester-hour courses will be accepted as the equivalent in subject-matter content of five quarter-hour courses.

Admission to the School of Veterinary Medicine must be gained through making formal application not less than four months in advance of entrance date. Applications will be considered only from students who submit evidence of satisfactory completion of all the above requirements. Students will be admitted at the beginning of the fall quarter only.

Admission under the Regional Plan. – Under the Regional Plan for Veterinary Training, the School of Veterinary Medicine serves five states – Alabama, Florida, Mississippi, Kentucky and Tennessee. While there is no limit on the number of applications, the School's facilities make it necessary to restrict admissions to 75 new students each year – 32 from Alabama and a fixed share of the other 43 from each of the other four participating states.

The Land-Grant Institution in each state participating under the Southern Regional Education plan maintains a counseling and guidance service for students desiring admission to the School of Veterinary Medicine. Students attending other than Land-Grant Institutions of the several states should contact the counseling and guidance service for information and advice concerning courses which will be acceptable in the pre-veterinary curriculum. Inquiries should be made early and addressed to:

Alabama:	Dean, School of Science & Literature Auburn University Auburn, Alabama
Florida:	Dean, College of Agriculture University of Florida Gainesville, Florida
Mississippi:	Dean, School of Agriculture Mississippi State University State College, Mississippi
Kentucky:	Associate Dean, School of Agriculture and Home Economics University of Kentucky Lexington, Kentucky
Tennessee:	Dean of Resident Instruction College of Agriculture University of Tennessee Knoxville, Tennessee

The procedure for making application for admission to the School of Veterinary Medicine under the Regional Plan varies in the several states. An officer, or board, in each state certifies applicants as to residence and evaluates the courses completed. Courses acceptable in the degree program at the State Land-Grant Institution will be considered acceptable in the Auburn University pre-veterinary program. An applicant who wishes to be included in his state's list of eligibles for entrance into the School of Veterinary Medicine should send his completed application together with three letters of recommendation and a transcript covering all college work completed to the appropriate address as indicated below:

Alabama:	Dean, School of Veterinary Medicine Auburn University Auburn, Alabama
Florida:	Secretary Board of Control for Fla. Institutions of Higher Learning Tallahassee, Florida
Kentucky:	Chairman, Committee on Regional Veterinary Training University of Kentucky Lexington, Kentucky
Mississippi:	Executive Secretary Board of Trustees for Institutions of Higher Learning State Capitol Jackson, Mississippi
Tennessee:	Committee on Regional Veterinary Training University of Tennessee Knoxville, Tennessee

The final selection of students to be admitted is made by the Committee on Admissions of the School of Veterinary Medicine, Auburn University. These selections are made from the applicants who have been certified by the committees in the respective states after giving due consideration to scholastic record and general adaptibility for the profession. The right is reserved to accept or reject admission of any applicant. All applications for admission must be on file at the School of Veterinary Medicine by May 1 preceding date of admission.

Microscopes. — In order to be admitted to the School of Veterinary Medicine, students must own a compound microscope acceptable to the faculty. Microscopes may be purchased through the Book Store of Auburn University.

Scholastic Requirements

Students enrolled in the School of Veterinary Medicine who make a scholastic average less than 1.25 for any two quarters of one academic year may be dropped from the School of Veterinary Medicine for scholastic deficiency. Students who make a grade of "F" on any course may be required to withdraw from the School of Veterinary Medicine until such time as the course is offered again. Such students may be required to repeat certain other courses in the curriculum for that quarter.

Students who are dropped under the above provisions are eligible for admission to other curricula provided they meet the University scholastic requirements for continuation in residence. The scholastic penalties incurred while enrolled in the School of Veterinary Medicine will become a part of the student's record.

Veterinary Curriculum

Below are the subjects required for each of the four years in the School of Veterinary Medicine.

Fourth-year veterinary students will be required to continue in school during the Summer, Fall and Winter quarters. Following completion of the

three quarters of senior academic work, each student will be required to serve an internship of one quarter with a reputable practicing veterinarian. A certificate of satisfactory completion of this internship will be required for graduation.

Curriculum in Veterinary Medicine (VM)

FIRST YEAR

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER
VM 320 Anatomy 5	VM 321 Anatomy 5	VM 322 Anatomy 5
VM 326 Histology 5	VM 327 Organology 5	VM 324 Veterinary Genetics 3
VM 330 Gen. Microbiology ..5	VM 331 Inf. & Immunity 5	VM 328 Embryology 5
VM 333 Zootechnics 3	VM 329 Physiology 3	VM 336 Physiology 5
		VM 334 Zootechnics 2

SECOND YEAR

VM 436 Pharmacology 5	VM 437 Pharmacology 3	VM 438 Pharmacology 5
VM 443 Physiology 5	VM 444 Physiology 5	VM 452 Clinical Pathology ..3
VM 450 General Pathology ..5	VM 451 Systemic and Special Pathology 5	VM 458 Parasitology 3
VM 456 Parasitology 3	VM 457 Parasitology 5	VM 453 Systemic and Spec. Pathology 2
		VM 461 Pathogenic Microbiology 5

THIRD YEAR

VM 500 Vet. Medicine 5	VM 501 Vet. Medicine 5	VM 502 Vet. Medicine 5
VM 510 Small Animal Med. 5	VM 503 General Surgery 3	VM 504 Large Animal Surgery 5
PH 422 Avian Diseases 5	VM 521 Milk Sanitation 5	VM 512 Small Animal Surgery 5
VM 526 Physical Diag. & Clinical Technique ..2	VM 527 Physical Diag. & Clinical Technique ..2	VM 519 Sm. An. Medicine ..3
VM 528 Applied Anatomy 2	VM 530 Radiation Biology & Diag. Radiology ..5	VM 508 Large Animal Clinic 1
	VM 531 Jurisp. & Ethics 1	VM 518 Small Animal Clinic 1

FOURTH YEAR

VM 551 Jurisp. & Ethics 1	VM 552 Jurisp. & Ethics 1	VM 556 Infectious Diseases ..5
VM 554 Vet. Medicine 3	VM 555 Infectious Diseases ..5	VM 558 Applied Anatomy 1
VM 557 Applied Anatomy 1	VM 561 Vet. Medicine 5	VM 582 Seminar 3
VM 560 Obstetrics 5	VM 563 Large Animal Surgery & Ob. Ex. 1	VM 588 Veterinary Medicine 5
VM 575 Meat Sanitation 5	VM 573 Sm. An. Surg. Ex. ..1	VM 564 Large Animal Surgery & Ob. Ex. 1
VM 562 Large Animal Surgery & Ob. Ex. 1	VM 567 Large Animal Clinic 2	VM 574 Sm. An. Surg. Ex. ..1
VM 572 Sm. An. Surg. Ex. ..1	VM 577 Small Animal Clinic 2	VM 568 Large Animal Clinic 2
VM 566 Large Animal Clinic 2		VM 578 Small Animal Clinic 2
VM 576 Small Animal Clinic 2		

Total—228 quarter hours

(See page 145 for Pre-Veterinary Medicine requirements.)

The Graduate School

W. V. Parker, *Dean*
W. S. Bailey, *Associate Dean*

ALL REGULATIONS governing the Graduate School are designed to equal or exceed the minimum standards recommended by the Conference of Deans of Southern Graduate Schools and the Commission on Colleges and Universities of the Southern Association of Colleges and Secondary Schools.

A student with a bachelor's degree from an accredited college or university may apply to the Dean of the Graduate School for admission. Application for admission, the form for which may be secured from the Graduate School, must be accompanied by a transcript of undergraduate credits. It must be received at least three weeks before registration. Every applicant must have a satisfactory undergraduate record and show adequate preparation in the field in which he desires to major as determined by the screening committee of the school or department concerned.

The Graduate School bulletin contains detailed information on the regulations of the Graduate School, the courses offered for graduate credit, the requirements for degrees, fellowships and assistantships, and other matters pertaining to graduate work in this institution. Seniors wishing to register for graduate courses should consult this bulletin for regulations concerning such registration. A bulletin may be obtained upon request from the Dean of the Graduate School.

The Graduate School administers graduate work leading to the degrees listed below.

The Master's Degree Program

Master of Science in the areas of Aerospace Engineering, Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Science, Animal Nutrition, Botany, Business Administration, Chemical Engineering, Chemistry, Civil Engineering, Dairy Manufacturing, Dairy Production, Education, Electrical Engineering, Entomology, Fisheries Management, Forestry, Game Management, Home Economics, Horticulture, Mathematics, Mechanical Engineering, Nuclear Science, Ornamental Horticulture, Pharmacy, Physics, Poultry Science, Psychology, Veterinary Medicine and Zoology.

Master of Arts in the areas of English, History, and Speech.

Other Master's Degrees: Master of Agriculture, Master of Agricultural Education, Master of Fine Arts, Master of Building Construction, Master of Business Administration, Master of Education, Master of Home Economics.

The Specialist in Education Program

Specialist in Education in the areas of Curriculum, Teaching, Administration, Supervision, and Guidance.

The Doctoral Degree Program

Doctor of Education in the areas of School Administration, Supervision and Guidance; and Curriculum and Teaching.

Doctor of Philosophy in the Departments of Agronomy and Soils, Animal Science, Botany and Plant Pathology, Chemistry, English, Mathematics, Mechanical Engineering, Physics, Poultry Science, and Zoology-Entomology, and an interdisciplinary program for Agricultural Engineers.

Research Program at the Oak Ridge Institute of Nuclear Studies

Auburn University is one of the sponsoring institutions of the Oak Ridge Institute of Nuclear Studies located at Oak Ridge, Tennessee. Through this cooperative association with the Oak Ridge Institute our Graduate Research Programs have at their disposal the facilities of the National Laboratories in Oak Ridge and the research staffs of these laboratories. When advanced degree candidates in certain areas have completed their resident work at Auburn it is possible, by special arrangement, for them to go to Oak Ridge to do their research problems and prepare their theses. In addition, it is possible for our faculty members to obtain appointments on the Oak Ridge Research Participation Program for varying periods, usually not less than three months, in order to pursue advanced studies in their fields of specialization. Thus, both faculty and students may keep abreast of the most modern and up-to-date developments in atomic and nuclear research that is in progress at the Oak Ridge Laboratories.

The students will go to Oak Ridge on Oak Ridge Graduate Fellowships. The stipend will be determined by the number of dependents of the student and by the level of work which he is prepared to do. Faculty members may work in Oak Ridge on stipends commensurate with their current college salary and rank.

Information on the opportunities for research in the Oak Ridge Laboratories is available in the office of the Dean of the Graduate School.

Grant-in-Aid Research Program

The Grant-in-Aid Program has for its purpose the stimulation of campus-wide interest and activity in basic research among the faculty and, indirectly, the upgrading and vitalizing of teaching on advanced levels of instruction. Funds made available by the University Administration are granted to faculty members in support of worthy research projects which as a rule have already been initiated and require only modest sums for their completion. Applications for grants are evaluated carefully by the Research Grant-in-Aid Committee. The Committee makes recommendations to the Dean of the Graduate School who presents the applications to the President for final approval.

Nuclear Science Center

Construction will begin early in 1963 on the Auburn University Nuclear Science Center. This facility will house a nuclear research reactor to be operated initially at a power level of 100 kilowatts. The Nuclear Science Center will provide research and teaching space for use by all Departments for work in all phases of the pure and applied aspects of the nuclear science field. It is expected that work will be done in the areas of agriculture, chemistry, engineering, home economics, pharmacy, physics and veterinary medicine.

Auburn Computer Center

The Auburn Cumputer Center was established in July, 1959. Administered by the Graduate School, it provides digital computing facilities without charge to students and staff and supports contractual research projects. The center is equipped with an IBM Model 1620 computer with 60,000 digits storage and punch card input-output. Auxiliary equipment and a library of programs are available in the center.

Description of Courses by Departments

This section contains all courses offered in the University, listed by departments, arranged in alphabetical order.

Courses bearing the numbers from 000 to 099 inclusive are remedial courses carrying no degree credit; those bearing the numbers 100 to 199, inclusive, are normally offered for freshmen; those from 200 to 299, sophomores; 300 to 399, juniors; 400 to 499, seniors; 500 to 599, fifth year students; 600 to 699, graduate students; and 700, doctoral candidates.

Description of courses in each department includes: (a) course number; (b) descriptive title; (c) in parentheses, credit in quarter hours i.e. one quarter (5), two quarters (5-5), etc.; (d) lecture and laboratory hours for courses with laboratory (where no statement is made the course consists of lecture periods equal in number to course credit); (e) the quarter in which the course is offered; (f) prerequisite (Pr.); (g) name of instructor; (h) description of subject matter and method.

Preceding the description of courses for each department is a list of the departmental faculty.

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General Elective Courses

Courses listed below are of non-technical and cultural nature offered as lecture and reading courses with three credits per quarter, for use primarily as electives in the junior, senior, and fifth years. With the approval of the dean they may be used as general electives elsewhere in the curriculum.

AF. Advanced Air Science (3). Lec. 4, Drill 2.
For students selected.

AR 360. Appreciation of Architecture (3). Pr., sophomore standing. (Not open to AR and ID students.)
A survey of architectural development with particular attention to American and contemporary examples. Illustrated lectures, readings, essays.

AR 370. Spaces of Living (3). Pr., junior standing. (Not open to AR and ID students.)
A survey of contemporary concepts of design, spatial organization, materials, furnishings, and gardens in relation to all major types of residential architecture. Illustrated lectures, readings, reports.

AT 332. American Painting and Sculpture (3).
A survey of American art and artists from the Colonial period to the present day. Illustrated lectures, readings.

AT 431. Contemporary Art (3).
A survey of modern painting, sculpture, and industrial design. Illustrated lectures, readings.

BY 308. Plants and Man (3). Lec. 3. Summer.
A brief introduction to the botanical characteristics of most categories of plants including their kinship, origin, past and present distribution, and various ways utilized, as timbers, fruits and other foods, fibers, forage, ornamentals, drugs, etc. Local field trips will be made. (Restricted to students who have no more than 5 hours credit in Botany.)

CH 342. Geology (3). Pr., CH 104 or sophomore standing.
A course in general geology.

DR 313. Drama Appreciation I (3). (Not open to Dramatic Arts majors.)
A survey of the theatre and stagecraft from early times to the present day, emphasizing the social and artistic position of the stage in each civilization. Illustrated lectures, readings.

DR 314. Drama Appreciation II (3). (Not open to Dramatic Arts majors.)
A survey of contemporary plays and productions, aimed to make theatre-going intelligent fun.

DR 350. Sound for the Theatre (3). Junior standing or approval of instructor.
The selection, recording, editing, and controlling of sound effects as they are needed in the theatre. A non-technical study of the recording process, along with the operation, care, and maintenance of tape recording equipment.

EC 206. Socio-Economic Foundations of Contemporary America (3).
An appraisal and survey of the social and economic developments which lead to and help toward an understanding of present day American society. Economic and social institutional development is studied against the background of the Industrial Revolution.

EC 301. Geo-Political Basis of World Powers (3). Pr., junior standing.
Deals with the interaction between the natural-physical environment and the international activities of world powers. Emphasis is placed upon the changing geographic and economic patterns in world affairs.

EC 303. Geography of the Soviet Union (3). Pr., junior standing.
The physical and human geography of the U.S.S.R. and its role in international affairs.

EC 340. Personal Finance (3). Pr., junior standing.
An informative study of plans for managing personal financial problems involving insurance, housing, household budgeting, investments, personal and bank loans, credit and time buying, etc.

EH 208. Literature of the Western World (3). Pr., EH 101-2 or 103-4 and EH 108 or EH 253. All quarters.
The study of about eight significant library works of the Western World which provide representative views of man in the Medieval, Renaissance-Reformation, and Eighteenth Century periods.

EH 301. Creative Writing (3). Fall, Spring.
A course devoted principally to the writing and criticizing of short stories. The student may be permitted to write poetry, drama, or any other form of imaginative literature.

EH 302. Creative Writing (3). Fall, Spring.
A continuation of English 301.

EH 310. Word Study (3). Fall, Spring.
A study of the history of English words and their meanings with the object of improving the student's command of his language and illustrating for him some of the patterns in the development of human thought.

EH 320. An Introduction to Drama (3). Winter.
Representative tragedies and comedies of Europe from antiquity to the present. Such figures as Sophocles, Moliere, Shakespeare, and Ibsen will be considered.

EH 350. Shakespeare's Greatest Plays (3). (Not open to students with credit in EH 451-52.)
A study of some of Shakespeare's masterpieces.

EH 360. Continental Fiction (3). Winter.
A study of representative European short stories and novels.

EH 365. Southern Literature (3). Spring.

EH 381. The Literature of the Age of Reason (3). Fall.
A study of rationalism, its assumptions and its effects, political, social, and scientific as seen in the works of such major eighteenth-century writers as Locke, Johnson, Burke, Voltaire, and Rousseau.

EH 385. The Impact of Science and Technology Upon Modern Literature (3). Winter.
An investigation of a few major 19th and 20th Century writers who reflect in their works the impact of scientific theory and methodology upon traditional, cultural, and philosophical values.

HE 302. Table Service (3). Each quarter.
A study is made of the accessories used for table service in their relation to each other and to the complete service of meals. Principles of flower arrangement are studied and forms of the different food services in the home.

HE 304. Home and Family Life (3). Lec. 3. Each quarter.
A study of the relationship of family members, economic and social problems at all age levels, and development tasks of individuals. Open to men and women.

HE 306. Personal Grooming (3). All quarters.
Good grooming and its contributing factors.

HE 345. Creative Crafts (1-2-3). Lab. 9.
A study of design and execution of creative crafts; viz., metal work, ceramics, weaving, fabric decoration.

HE 353. Community and Family Health (3). Lec. 2, Lab. 2. Fall, Spring.
A study of health problems related to the community and family including a survey of available health facilities with field trips.

HE 355. Consumer Textiles (3). Fall, Winter, Spring.
A study of textile fabrics, finishes and trade practice with special emphasis on consumer problems.

HE 372. Nutrition and Health (3).
A study and application of the fundamentals of human nutrition. Food requirements of different age levels and selection of food at different cost levels are considered. Open to all students except Nutrition or Nursing Science majors.

HF 225. Flower Arranging (3). Lec. 2, Lab. 2. Fall.
The principles and practices of flower arranging in the home.

HY 204. History of the Modern World (3). (Credit in HY 208, 312, and 313 excludes credit for this course.)
A brief survey of the major periods of modern history and the factors contributing to the Modern World Civilization. (Primarily for students in Engineering curricula.)

HY 314. United States Colonial History (3). Pr., junior standing.
A survey of the political, economic, and social history of the colonies from their founding through the American Revolution.

HY 315. International Organization (3). Pr., junior standing.
This course traces the evolution of international organization from the beginning through the United Nations.

HY 322. The United States in World Affairs (3). Pr., junior standing.
A brief survey of the influence which the United States has exerted in international affairs.

HY 371. History of the West (3). Pr., junior standing.
A brief history of the development of the West and of its influence on American History.

MS Advanced Military Science (3). Lec. 4, Drill 2.
For students selected.

MU 371. Introduction to Music (3). (May not be taken for credit by music majors or minors.)
An introductory course in the understanding of music including an explanation of basic terms, notations, rhythms, tonal systems, vocal and piano score reading.

MU 372. Music in the Western Civilization (3). (May not be taken for credit by music majors or minors.)
Music as related to the philosophical, economic, and social growth of our culture from the Roman Empire to the 20th Century.

MU 373. Appreciation of Music (3). (May not be taken for credit by music majors or minors.)
Outstanding composers and compositions. No previous music training required. An orientation in the art of listening.

MU 374. Masterpieces of Music (3). (May not be taken for credit by music majors or minors.)
A study of the representative musical works of each great period of musical history. No previous music training required.

MU 375. History of Jazz (3). (May not be taken for credit by music majors or minors.)
A study of the origin, development, and styles of jazz music; people important in the development of American jazz music.

MU 376. Music for Ballet and Theatre (3). (May not be taken for credit by music majors or minors.)
A survey of outstanding musical scores in the field of ballet and the theatre with special emphasis on the modern American musical theatre.

MU 377. Music Arranging (3). By permission.
A project course in arranging various combinations from quartet to symphonic band, and arranging for solo and choral groups.

NS. Advanced Naval Science (3). Lec. 4, Drill 2.
For students selected.

PA 301. Introduction to Philosophy (3).
An introductory survey of the great philosophical problems underlying western civilization.

PA 302. Introduction to Ethics (3).
An introduction to the general principles of morality as applied to human conduct.

PA 308. Introduction to Logic (3). (Not open to students with credit in PA 307.)
Designed to acquaint the student with the principles of logical thinking with emphasis upon contemporary scientific procedures.

PG 310. Reading Improvement (3). Lec. 1, Lab. 4. (Not open to students with credit in PG 101.)
A thorough diagnosis of each individual student's present degree of efficiency in the reading process; to design an individual program of improvement for each student.

PG 311. The Behavior of Man (3). (Not available to students with credit in PG 211. May be used as a prerequisite for PG 325, PG 330, PG 345.)
The humanistic aspects of general psychology emphasizing theory and principles of the science of the behavior of man. Includes topics such as: individual differences, motivation, world of form and space, personality in a social environment, and the assessment of man.

PS 217. Astronomy (3).
A brief course in descriptive astronomy, accompanied by occasional observations of the heavenly bodies with a three-inch refracting telescope.

PY 310. Public Health (3). Pr., junior standing.
A non-technical survey of the common communicable diseases including the causative agent, mode of transmission and symptoms. Hygienic, sanitation, and immunization control measures are discussed along with the roles of Federal and State health agencies. (Not open to students in pharmacy.)

RE 301. Religion and Modern Thought (3).
A course dealing with the relation between the philosophical foundations of Christianity and modern thought in other fields.

RE 305. Comparative Religions (3).
A study of the principal religions of the world, including readings in the history and literature of the peoples whose religions are discussed.

RE 306. Studies in the Gospels (3).
A study of the characteristics of the Gospels and the harmony among them.

RE 307. History of the Christian Church (3).
A history of the Christian Church from the close of the New Testament period to the present time with chief emphasis upon the development in Western Europe and in the United States.

RE 308. The Epistles of Paul (3).
A study of the Epistles of Paul in the New Testament; their dates, backgrounds, and arguments; the major emphasis of Paul's thought; particular studies of portions of Thessalonians, I Corinthians, and Romans to demonstrate typical Pauline themes.

RE 309. The Prophets of Israel (3).
A history of the Hebrew religion as the background of Christianity. Selected figures of the Old Testament are studied, each seen in his own day seeking to interpret his times in the light of the eternal messages he was called to deliver.

SA 113. Personal Typewriting (3). Lab. 6. (Not open to those with credit in SA 111 or who have had one high school unit in typing.)
Introductory course designed for students who wish to learn typewriting for personal use. Emphasis on touch control of keyboard, centering, appropriate styles for letters, and the preparation of reports. More time spent on the application of fundamentals than on speed.

SP 253. Group Leadership (3).
This course considers the nature and functions of group leadership; the role of democratic leadership in organizing and conducting a group meeting to reach the aims of that group. Students gain leadership experience in class activities designed to help them learn and perfect democratic leadership techniques.

SP 305. Public Speaking (3). (Credit in this course excludes credit for SP 231.)
Designed to aid the student in preparing and delivering effective public speeches extemporaneously. Emphasis is on narrative, expository, argumentative, and motivational speeches.

SP 316. Parliamentary Procedure (3).
Designed to aid the individual who may lead or participate in discussions or organizations where orderly procedure is needed. Theory and practice both employed.

SP 334. Great American Speeches (3). All quarters.
A critical study and comparison of representative outstanding American speeches; the issues with which they were identified; their relation to the social scene.

SY 205. Preparation for Marriage (3).
Basic factors in dating, courtship, mating selection, and engagement in preparation for marriage and family living.

SY 307. The Court and Penal Administration (3).
An analysis of the experience of the lawbreaker from arrest through the court and prison to the eventual return to society. Particular attention is paid to correction. (To be offered in alternate years.)

SY 311. Technology and Social Change (3). Pr., junior standing.
The relationship between technological development and changes in modern society. Special emphasis is placed upon the human relations aspects of modern science. Designed primarily to meet social science needs of students in the fields of engineering, agriculture, education, and the physical sciences.

SY 312. Marriage Adjustments (3). Pr., junior standing.
A survey of emotional, social and biological factors in the family setting with emphasis upon adjustments of marriage and parenthood.

ZY 204. Insects (3).
An introduction to the study of life processes, occurrence, and importance of insects. (Credit not allowed to students who have credit in a more advanced course in entomology.)

ZY 205. Wildlife Conservation (3). Fall.
A study of the conservation and natural history of important wildlife animals, especially Alabama fish, amphibians, reptiles, birds, and mammals. Some field trips will be required as substitute for part of the scheduled lectures.

ZY 206. Conservation in the United States (3). Winter, Spring, Summer.
A study of the basic facts essential to an understanding of current problems pertaining to the conservation of our rapidly depleting natural resources such as soil, water, minerals, forest, and wildlife. Especially planned for elementary and high school teachers.

ZY 207. Birds (3). Fall, Summer.
A consideration of birds in relation to agriculture and game management, recognition of various species as to flight, color markings, songs, and feeding habits.

ZY 210. Fish Culture (3). Winter.
Introduction to the construction and management of ponds, and the principles underlying fish production; also fishing methods, bait production, and the identification of the more common sport fish.

Aeronautical Administration (AA)

Professor Pitts
Assistant Professors Robinson and Williams

201. Elementary Aeronautics (5).
Introduction to aviation and the basic principles of flight. This course is open to students in all divisions of the University who desire a general and practical knowledge of aviation.

303. Air Navigation I (5). Pr., MH 112.
Construction of maps and charts; dead reckoning and pilotage; solution, application and practice of navigation problems.

304. Meteorology (5). Lec. 4, Lab. 3. Pr., sophomore standing.
Weather elements as related to operation of aircraft, computation of data; preparation of weather maps.

306. Private Pilot Training—Flight (3). Lec. 1, Lab. 6.
Dual and solo flight instruction as required for the FAA Private Pilot Certificate. Previous flight experience may be substituted for a part of the above. See page 32 for fees.

307. Air Navigation II (5). Pr. AA 303.
Use of navigation instruments and radio aids; celestial navigation; planning of long range flights; practice of problems.

406. Commercial Pilot Training—Flight (3). Lab. 9.
Dual and solo flight instruction as required for the FAA Commercial Pilot Certificate. Previous flight experience may be substituted for a part of the above. See page 32 for fees.

407. Aircraft Powerplants (5). Pr., junior standing.
Engine nomenclature and types, cycles of operation, lubrication, fuels, carburetion, ignition and starting systems, engine-propellor performance, introduction to jet propulsion.

416. Airport Management (5). Pr., junior standing.
Principles of management; financing the airport; sources of income; establishment of rates for services rendered; problems of equipment and airport maintenance; accounting procedures; legal responsibilities; merchandizing.

417. Airline Operation (5). Pr., junior standing.
History of airlines; financial structure and sources of capital of airlines; sales, reservations and space control; dispatching and passenger care; determination of tariffs; personnel relations; research; public relations.

418. Air Transportation (5). Pr., junior standing.
Historical development and present status of air transportation facilities; regulation, state and federal; legal characteristics of air transportation industry; problems and services of commercial air transportation.

419. Air Traffic Control (5). Lec. 4, Lab. 3. Pr., junior standing and AA 307.
A study of all facilities used in controlling air traffic with special emphasis on control center and control tower operation.

420. Civil Air Regulations (5). Pr., junior standing.
A study of all regulations concerning airmen, aircraft, air agencies, operation rooms and traffic rules.

423. Flight Instructor Training (3). Lec. 1, Lab. 6. Pr., a valid Commercial Pilot Certificate.
Instruction in the theory, methods and technique of flight training. Sufficient ground and flight instruction is given to qualify for the FAA Flight Instructor Rating. See page 32 for fees.

424. Instrument Flying (3). Lab. 9. Pr., a valid Private or Commercial Pilot Certificate.
Ground and flight instruction in the theory and practice of instrument flying. See page 32 for fees.

425. Aircraft Components (5). Pr., junior standing.
Design, installation, use, and function of hydraulic, mechanical, and electrical systems and equipment of aircraft.

427. Multi-Engine Training (3). Lab. 9. Pr., a valid Private or Commercial Pilot Certificate.
Instruction in the methods and techniques of multi-engine aircraft pilotage. Sufficient ground and flight instruction is given to qualify for the FFA pilot rating of Multi-Engine—Land. See page 32 for fees.

Aerospace Engineering (AE)

Professors Pitts, Djordjevic, Hamner, and Martin
Associate Professor Sherling
Assistant Professor Nichols

205. Aerospace Fundamentals (3).
Introduction to aerospace concepts and terminology. Consideration is given to the schemes and designs of aerospace systems.

206. Elementary Astronautics (3). Pr., AE 205. Corequisite, MH 361.
Fundamental study of the atmosphere and development of the standard atmosphere. Introduction to planetary motion with emphasis on mechanics of the solar system. The course is designed to acquaint the student with the overall environment and technology of space travel.

300. Aerospace Analysis (5). Pr., MH 361.
Introduction and application of special notations and methods used in aerospace engineering.

301. Basic Aerodynamics (5). Pr., AE 205, ME 307, ME 301, or ME 310 and MH 361.
The basic equations of fluid dynamics with application to the prediction of pressure distributions, velocity measuring techniques, and aerodynamic testing facilities. Basic airfoil and wing theory with application extended to propellers, elementary boundary layer theory, and fundamentals of dimensional analysis are considered. Also includes basic performance characteristics.

308. Aircraft Structures I (5). Pr., AE 205 and ME 306.
Load analysis of aerospace structures involving load factors, space frames, beams and redundant frames.

309. Aerodynamics Laboratory I (1). Lab. (3). Corequisite, AE 301.
Basic aerodynamic investigations and written reports, wind tunnel calibration, basic wind tunnel tests and interpretation of test results.

401. Aeronautical Problems I (1). Lab. 3. Pr., senior standing.
Investigation of current aeronautical problems; preparation and presentation of technical papers and reports.

402. Aeronautical Problems II (1). Lab. 3. Pr., AE 401.
Continuation of AE 401.

403. Stability and Control (5). Pr., AE 404.
Stability and control of conventional aircraft and advanced types of missiles. Static longitudinal and lateral stability and control criteria and requirements, stick fixed and stick free. Derivation of generalized equations of the dynamics of flight. Longitudinal dynamic stability, numerical analysis and analog computer methods of solution. Control effectiveness and stick forces in standard maneuvers.

404. High Speed Aerodynamics (5). Pr., junior standing and AE 413.
Fundamental principles of compressible flow, including subsonic, transonic, supersonic and hypersonic aerodynamics, high speed wind tunnels and laboratory techniques.

405. Boundary Layer Theory and Aerodynamic Heating (5). Pr., junior standing and AE 404.
Theoretical background essential to a fundamental understanding of laminar and turbulent boundary layers and their relation to skin friction and heat transfer. Basic concepts of the continuum, slip and free-molecule flow regimes and their application to typical aerodynamic heating problems.

408. Aerodynamics Laboratory II (1). Lab. 3. Corequisite, AE 403.
Experimental determination of aircraft stability derivatives, including effect of aircraft configuration changes.

409. Aircraft Structures II (5). Pr., AE 308.
Analysis for deflections, redundancies, structural stability of flat and curved plates; sandwich construction; shell analysis.

411. Airplane Design (5). Lec. 3, Lab. 6. Pr., AE 409.
Aircraft and missile design specifications and their application to typical structural design problems. (Computer applications to structural problems.)

412. Airplane Structures Laboratory (2). Lab. 6. Corequisite, AE 409.
Experimental stress analysis techniques and their application to aerospace structures. Electrical, mechanical and optical strain measurements for static and dynamic loading. Fatigue and elevated temperature effects.

413. Theoretical Aerodynamics (5). Pr., AE 300 and AE 301.
Fundamental practices of aerodynamics, potential flow theory, dynamics of viscous fluids. Correlation of potential flows theory with experimental results.

414. Gasdynamics (5). Pr., Permission of instructor and junior standing.
Fundamentals of the kinetic theory of gases. Molecular transport of mass, momentum and energy. Momentum and heat diffusion basic equations for isentropic flow. Nonisentropic flow, boundary layer and shock wave phenomena. Mechanics of rarefied gases. Aerothermodynamic aspects of hypersonic flow.

415. Rocket and Jet Propulsion (5). Pr., junior standing and ME 301 or ME 310, and AE 301 or ME 313.
Thermodynamic cycle of rocket and jet engines, air compressors, and gas turbines. Flow of gasses through ducts and nozzles.

428. Space Propulsion Systems (5). Pr., junior standing and AE 415.
Introduction to reaction engines for use in outer space vehicles. Environment of outer space, power requirements for space missions, introduction to relativistic mechanics, nuclear power systems, particle generators, magnetohydrodynamics, plasma accelerators and photonic engines.

429. Aircraft Vibration and Flutter (5). Pr., AE 301 and ME 307.
Lagrangean equation of motion, linear and multiple degree-of-freedom systems, coupled and un-coupled beam vibration, flutter theory.

430. Rotary Wing Aircraft (5). Pr., AE 301.
Rotary wing flight characteristics and basic aerodynamics including stability, control vibration and performance.

431. Astronautics (5). Pr., AE 206, AE 300 and AE 301.
Trajectory analysis, including application of digital and analog computers, ballistic missile range parameters and deviation coefficients; satellite orbits and rocket interplanetary trajectories.

GRADUATE COURSES

601. Advanced Supersonic Aerodynamics (5). Pr., AE 404.
A continuation of AE 404, High Speed Aerodynamics. Consists of a rigorous development of linearized and nonlinearized compressible fluid flow and application. Lifting surfaces, lifting bodies, duct flow and boundary layer effects.

605. Aeroelasticity (5). Pr., AE 429.
General formulation of aeroelastic problems, buffeting, flutter and loss of control, dynamic stresses.

611. Thrust Generation (5). Pr., AE 301.
Aerothermodynamics of compressible flow, chemical propellant characteristics, heat transfer in fluid flow, nuclear propulsion.

615. Hypersonic Flow Theory (5). Pr., AE 404, Corequisite, MH 461.
Hypersonic continuum theory, governing equations of motion for two and three dimensional flows, hypersonic small disturbance theory, viscous effects. Real gas effects in gasdynamics and rarefied gas flows, basic heat transfer concepts.

619. Dynamics of Flight (5). Pr., AE 403, Corequisite, MH 661.
Small-disturbance theory and the linearized solutions of the general equations of unsteady motions, aerodynamic derivatives analysis, aerodynamic transfer functions, dynamic stability of uncontrolled longitudinal and lateral motions, solutions of the dynamic stability problems by electronic computing devices, inverse problem, automatic stability and control.

699. Research and Thesis. Credit to be arranged.

Agricultural Economics (AS)

Professors Lanham, Blackstone, Danner, White, and Yeager
Associate Professors Chastain, Kern, Morrill, and Partenheimer
Assistant Professors Dunkelberger, Miller, and Wilson

Agricultural Economics as a specialized field has increased in importance as commercial aspects of agriculture have increased. As a supporting field to other subject matter areas, it has increased in importance as economic, social, and political factors have increased in all of agriculture.

Agricultural Economics is concerned with the business aspects of agriculture—from the acquisition, organization, and management of farms to the operation of businesses concerned with the processing and distribution of farm products—and with all businesses that serve the needs of agriculture. Thus, Agricultural Economics is concerned with the economics of producing, processing, and marketing farm-produced products, with prices paid for these products and with prices paid for goods and services used by agricultural firms. It deals not only with the individual farm, but also with private and public agencies affecting agriculture. This field of study embraces subject matter areas including farm organization and management, economics of

production, agricultural marketing, farmers' cooperatives, rural business management, agricultural prices, agricultural credit and financing, public policy, land problems and policies, and other related areas.

101. Agricultural Orientation (0). Lec. 1. All quarters. (Required of all students in School of Agriculture).

102. Agricultural Economics Orientation (0). Lec. 1. (Required of all students in Agricultural Administration).

202. Agricultural Economics (5). All quarters. Pr., sophomore standing.
Principles of economics as applied to agriculture. Agriculture in the national and state economy. An orientation in agricultural economics dealing especially with economic principles involved in changes and trends in farm-related production, marketing, prices, consumption, taxation, credit, finance, public policies, tenure, etc., and with utilization of land, labor, and capital.

301. Agricultural Marketing (5). Pr., AS 202 or EC 201.
Principles and problems involved in marketing farm products. Analysis of marketing functions, services, and costs; reducing costs and improving marketing efficiency. Marketing methods and distribution channels of major farm commodities. Market institutions and operation.

302. Farm Records (3) . Pr., AS 202 or EC 201.
Farm records and accounts and their uses. Kinds and systems of records and accounts adapted to use on Alabama farms. Using farm records to aid in the successful and profitable operation of farm businesses; in the integration of farm and home development; to complement necessary records for income and Social Security tax purposes; and as a basis for analyzing and planning farm businesses.

303. Agricultural Cooperatives (3). Pr., AS 202.
Principles and problems of organizing and operating farmers' cooperative buying and selling associations. History, importance, and types of cooperative, non-profit, and mutual associations. Development of cooperative action, collective bargaining, and cooperative organization. Analysis of cooperatives in the economy and comparisons with other forms of business organization.

304. Agricultural Finance (3). Pr., AS 202.
Economic problems and policies in financing agriculture. Capital requirements and credit needs; sources, availability, and costs of capital and credit; principles of lending, borrowing, and investment; voluntary and involuntary capital rationing; institutional developments for improving allocation of capital and credit. Emphasis is placed on both public and private credit institutions and on financing problems and policies in Alabama agriculture.

305. Farm Appraisal (3) . Pr., AS 202.
The theory of land values; techniques of farm land and building appraisals for different purposes; relationships of land use, soils, crops, forestry management, buildings, land titles, farm prices, taxes, and interest rates to land values; actual appraisals of selected farms; evaluation of appraisal methods and forms currently in use.

361. Rural Sociology (5).
The nature and organization of the rural community with special emphasis given to the culture, social organization, and social problems of rural people.

401. Farm Management (5). Pr., AS 202 or EC 201 and junior standing.
Principles and problems involved in acquiring, organizing, and operating a successful farm business. Formation and integration of family and farm business goals. Development of managerial skill for farming, farm and home development work, and professional farm management work.

403. Agricultural Prices (3). Pr., AS 202 or EC 201 and junior standing.
Principles and factors involved in the pricing process with special reference to agricultural products and markets. Functions of prices and principles of supply and demand in price determination. Sources of farm price data and methods of price analysis. Policy implications of economic principles as applied to farm price policy programs.

405. Agricultural Policy (3). Pr., AS 202 or EC 201 and junior standing.
Concepts, objectives and operation of public policies affecting agriculture. Development of agricultural policies in the United States. Alternative methods of dealing with farm problems at national, state, and local levels, and analyses of interrelationships with other public policy programs. Evaluation of consequences for farmers, consumers, and taxpayers. Emphasis is on current agricultural policies and proposals.

410. Agricultural Business Management (3). Pr., AS 202 or EC 201 and junior standing.
Principles and problems involved in acquiring, organizing, and operating successful agricultural businesses; capital requirements for selected agricultural businesses, factors affecting location and growth, and measures of technical and economic efficiency in organization and operation; practices involved in buying, pricing, and merchandizing; management problems and policies in financing, personnel, and public relations.

411. Economic Development of Rural Resources (3). Pr., AS 202 and junior standing.
Theoretical and empirical study of the processes of economic growth and development; the problems of undeveloped and underdeveloped areas; the role of agriculture in a developing economy; an examination of the policies and programs needed for effective economic growth and development.

441. History and Philosophy of Extension (3). Lec. 4. Pr., junior standing.
Designed to provide a background, understanding, and appreciation of the Cooperative Extension Service, its objectives, scope, relationships, and functions as an educational institution. This course is intended to meet the needs of students preparing for work in Agricultural and Home Economics Extension as well as those currently so engaged. (Credit in HE 401 excludes credit in this course.)

461. Sociology of Rural Life (3). Lec. 4. Pr., graduate standing.
Rural sociology with consideration of the social structures and social processes of rural social systems. Credit for AS 361 precludes credit for this course. (This course is designed primarily for credit at off-campus centers.)

490. Senior Seminar (1). Lec. 1. Pr., senior standing.
Current developments in Agricultural Economics; the role of Agricultural Economics in the general economy.

GRADUATE COURSES

601. Advanced Farm Management (5). Pr., graduate standing or consent of instructor.
Advanced theory and application of farm management principles and other economic concepts in agriculture. Emphasis is on successful and profitable organization, operation, and management of various types of farms. Optimum utilization of available resources on individual farms.

602. Advanced Agricultural Prices (5). Pr., EC 345 and graduate standing or consent of instructor.
Methods of price analysis, separation of fluctuations from price trends, measurement of changes in supply and demand of farm products. Factors affecting prices, price trends, price cycles, and other price structures. Interrelated demands, elasticity concepts, appraisal of recent supply and demand studies. Emphasis is on agricultural products.

603. Land Economics (5). Pr., graduate standing or consent of instructor.
Principal economic and institutional factors affecting man in his use of land. Supply, demand, and future requirements for land. Property rights, land planning, zoning, and other social controls affecting land utilization. Land appraisal and valuation. Successful enterprise location. Rural and urban development, use, and conservation of land resources.

604. Advanced Cooperative Marketing (5). Pr., graduate standing or consent of instructor.
Cooperative theory and practices. Detailed study of history and development of cooperative movement in the United States and selected foreign countries. Special emphasis on current cooperative marketing status with respect to organization, legal status, and current operating policies and methods used by selected farmers' cooperatives.

605. Advanced Agricultural Marketing (5). Pr., graduate standing or consent of instructor.
Theory of marketing with emphasis on its application to methods used and problems faced in marketing Alabama-produced farm products. Objectives in agricultural marketing. Marketing orders and agreements, marketing quotas, and other policy programs affecting marketing. Margins, futures, prices, grades, transportation, storage, advertising, promotion, etc., as they affect farmers' marketing. Marketing survey methods.

608. Economics of Agricultural Production (5). Pr., EC 451 and graduate standing or consent of instructor.
Resource allocation and efficiency of production. Production and efficiency in the firm, between firms, and between agriculture and other industries. Influences on agricultural resource allocation and efficiency of risk and uncertainty including price instability, institutional changes, technological advances, imperfect knowledge of production methods, and variations in the human element with emphasis on the role of management.

641. Extension Methods (3). Lec. 4. Pr., AS 441 or the equivalent.
Various methods that may be used in projecting Extension programs are reviewed and related to effective program accomplishment for particular objectives and under different conditions that might prevail.

642. Extension Programs (3). Lec. 4. Pr., AS 441 or the equivalent.
The over-all Extension organization and its relation to the steps and procedures of program development and evaluation. Designed particularly to meet the needs of persons responsible for Extension program development and evaluation at the county level.

651. Farm Organization and Management (3). Lec. 4. Pr., graduate standing.
Formation and integration of family and farm business goals; acquisition, organization, operation and management of successful farm businesses; organization and management of efficient farm units; development of managerial skill for farming, farm and home development work, and other farm management work; field study of organization, operation, and management of selected farms. (Credit for both AS 651 and AS 601 may not be used to meet requirements for the Master's degree.)

652. Agricultural Prices and Marketing (3). Lec. 4. Pr., graduate standing.
Principles and problems in marketing agricultural products. Objectives in agricultural marketing. Factors involved in the pricing process of agricultural products and markets. Function of prices and principles of supply and demand in price determination. Sources of farm price and market data, and methods of price and market analysis: Implications of current farm price policy and marketing programs. (Credit for both AS 652 and AS 602 may not be used to meet requirements for the Master's degree.)

653. Public Policy in Agriculture (3). Lec. 4. Pr., graduate standing.
Concepts, objectives, and operation of public policies affecting agriculture; development of agricultural policies in the United States; alternative methods of dealing with farm problems and opportunities at national, state, and local levels, and analysis of interrelationships with other public policy programs; evaluation of consequences for farmers, consumers, and taxpayers; emphasis on current agricultural policies and programs, and on current public policy.

661. Regionalism and Rural Life (3). Lec. 4.
The regionalist orientation and its application to rural living with specific attention to the Southern Regions of the United States. Topics covered will include inter-regional influences, subcultural variations, ecological patterns, topographical features, and temporal consideration.

662. Social Organization and Community Living in Rural Areas (3). Lec. 4.
The organization of rural society and an application of the group dynamics perspective to rural community life, problems in rural living, and proposals for facilitating action programs in rural areas such as leadership development, group analysis and participation, and effective community organization.

670. Research Methodology in Agricultural Economics (3). Pr., graduate standing and consent of instructor.
Introduction to scientific method and its application in planning and conducting research in agricultural economics, nature and limitations of economic analysis; problem selection, project planning, analytical framework, development and use of questionnaires, sampling procedures, control groups, obtaining and analyzing data, and interpreting and presenting results; evaluation of current research procedures in agricultural economics and related areas.

680. Advanced Agricultural Economics Problems. Credit to be arranged.

690. Seminar. (1-1-1). Fall, Winter, Spring.

699. Research and Thesis. Credit to be arranged.

Agricultural Education (AED)

Head Professor Montgomery
Professor Deloney
Associate Professors Bottoms and Pruett

Courses in Agricultural Education are concerned chiefly with the preparation of teachers of vocational agriculture and related occupations. However, the Department is in the School of Education and offers courses of general educational interest in visual aids, adult education, vocational education and in school and community relations.

346. Vocational and Practical Arts Education (3). Winter.
Ways of studying occupational needs and developing and operating local program of vocational and practical arts education.

405. The School Shop (5). Lec. 2, Lab. 6. Winter. Bottoms
Organization and management of the school shop; methods and materials integrated with the study of jobs and problems basic to industrial arts and agricultural education.

406. Farm and Home Construction and Maintenance (5). Lec. 2, Lab. 6. Winter, Summer. Bottoms
Procedure and abilities needed for teaching such jobs and problems as elementary scale drawing and plan reading; farmstead layout, functional requirements of farm houses, shelter, and storage, water system; septic tank and sewage disposal; heating, concrete work, and painting.

407. Practicum in Farm Electricity (5). Lec. 2, Lab. 6. Spring, Fall. Bottoms
Utilization of electricity in the home, school and community enterprises; selection, installation, operation and maintenance of electrical equipment; electrical devices for school and community exhibits. Field assignments will be made.

408. Teaching Farm Mechanics (5). Lec. 3, Lab. 4. Summer. Pr., junior standing. Bottoms
Objectives and methods; equipment and management of farm shop; organization of projects; recent developments in farm mechanics; in-service teaching problems. Students will plan and demonstrate methods of teaching mechanical skills.

446. Methods in Vocational Agriculture (5). Fall, Spring. Montgomery, Pruett
Methods and materials in the teaching of vocational agriculture.

456. Teaching Aids in Agricultural Education (4). Lec. 3, Lab. 3. Fall, Spring. Deloney
The preparation and use of materials in teaching vocational agriculture.

466. Teaching Out-Of-School Groups (5). Fall, Spring. Pruett
Conducting young farmer and adult classes and working with community groups in such procedures as community study, promotional and organizational procedures, teaching groups, and on-farm instruction.

485. Audio-Visual Materials (5). Lec. 4, Lab. 2. Winter, Summer. Pr., junior standing. Deloney
Examination and evaluation of films, filmstrips, slides, exhibits, charts, maps, globes, recordings and recording devices, radio and television programs. Attention is given to the contribution of audio-visual materials to the elementary and secondary school curriculum, to sources of audio-visual materials, and to the operation, care and housing of necessary equipment.

486. Student Teaching (15). Pr., senior standing. Fall, Winter. Staff
One quarter of teaching, including all aspects of the work of a teacher of vocational agriculture, such as in-school teaching, young farmer and adult classes, on-farm instruction, and community work, will be required.

COURSES PRIMARILY FOR GRADUATE STUDENTS

Special courses are offered to teachers of vocational agriculture in the first term of each summer quarter. Various departments offer 400 and 600 courses that may be selected for the minor upon approval. A list of suggested courses may be obtained from the Department of Agricultural Education. Graduate courses are offered in the regular quarter schedule and on Saturdays.

601. Social Foundations in Education (5). Winter, Summer. Montgomery
Man as a social being, his relationships, his social inventions, including community organization and structure, his mores and value patterns, decision making, leadership and fellowship, their significance for educational goals, the curriculum, teaching, learning and leadership. (Selected portions of the course may be offered as a three (3) credit hour course in the Master of Agriculture program.)

602. Teacher Education in Agriculture (5). Summer. Deloney
Designed for supervisors, supervising teachers, teacher trainers and other graduate students preparing for work in teacher education in agriculture. State organization for teacher training; duties and responsibilities of those involved; analysis of content of teacher training courses; standards for training schools; in-service training and supervision; and a review of research in the field. Individual problems.

604. Adult Education (5). Summer, Winter. Pruett
Analysis of the problems and organizations of adult groups, including the need for adult education; the nature of adult learning; procedures in organizing adult groups; creating and maintaining interest; selection of reading materials; teaching procedures appropriate to adult groups; follow-up and supervision; and fostering particular adult interest groups in rural communities. (Selected portions of this course may be offered as a 3-credit hour course at off-campus centers).

605. Young Farmer Education (5). Summer.
An analysis of the problems related to young farmer programs in vocational agriculture with attention to the development of objectives and procedures in the organization and conduct of such instruction.

607. Seminar in Research in Agricultural Education (4). Winter, Summer. Staff
Review and criticism of contributions of research in agricultural education; using research in solving current problems; needs for additional research; planning of a comprehensive study or completion of a small study.

609. Selection, Creation and Use of Audio-Visual Materials (5). Lec. 3, Lab. 4. Pr., AD 485 or consent of instructor. Winter, Summer. Deloney
Selection and use of various materials for specific educational purposes and the production of materials as learning experiences. Skills and techniques used in the production of graphic materials, an analysis of the effectiveness of various materials, and the factors involved in developing a desirable audio-visual aids program for a school system are studied.

651. Research Studies in Agricultural Education (2-5). Staff
See description under ED 651.

699. Thesis Research. Credit to be arranged. May be taken more than one quarter. Staff

Agricultural Engineering (AN)

Professors Kummer and Neal
Research Lecturers Cooper, Gill, Nichols, and Reed
Associate Professors Renoll and Dumas
Assistant Professor Richardson

Agricultural Engineering is the application of fundamental engineering principles to the solution of the problems of agriculture.

The courses offered by the Agricultural Engineering Department are designed to give the student a conception of modern methods of agricultural production, and the conservation and utilization of land, buildings, and equipment.

Students planning to prepare themselves for agricultural engineering work should consult with members of the agricultural engineering staff.

Work leading to the Master of Science and Doctor of Philosophy degrees for Agricultural Engineers is offered. (See Graduate Bulletin for detailed information.)

101-2. Introduction to Agricultural Engineering (0). Lec. 1. Winter, Spring. Staff
Orientation and consultation for all freshmen and new students.

201. Soil and Implement Mechanics (5). Lec. 3, Lab. 6. Fall. Pr., EG 105. Renoll
Soil and implement relationships of common tillage tools. Machinery economics with respect to size and capacity of machines. Implement design as related to tilth.

301. Drainage and Terracing (5). Lec. 3, Lab. 6. Fall, Spring, Summer. Neal
Practical applications of drainage and terracing.

302. Farm Structures (5). Lec. 3, Lab. 4. Fall. Dumas
Analysis and design of functional structures for use on the farm, physical and structural properties of natural and synthetic construction materials and methods of construction.

303. Farm Machinery and Equipment (5). Lec. 3, Lab. 6. Spring, Fall, Summer. Dumas
Selection, operation, and servicing of mechanical farm equipment used in seedbed preparation, planting, cultivating, and harvesting.

304. Farm Electrical Design (5). Lec. 3, Lab. 4. Spring. Pr., EE 202. Richardson
Farm wiring system design, characteristics and application of electrical equipment and control circuits for use on the farm. Safety precautions.

305. Farm Tractors and Engines (5). Lec. 3, Lab. 4. Winter. Neal
Selection, operation, and servicing of tractors and engines employing different principles of operation and fuels.

306. Farm Building Construction (3). Lec. 2, Lab. 3. Winter. Dumas
Materials and methods of farm buildings construction. Selection, repair, and use of farm buildings.

307. Farm Wiring and Motors (3). Lec. 2, Lab. 3. Spring. Richardson
Fundamentals of residential and farmstead wiring. Selection, operation, and care of farm motors.

308. Crop Processing and Materials Handling (3). Lec. 2, Lab. 3. Fall. Pr., soph. standing. Staff
The principles and methods of farm crop processing systems including drying, storing, pelleting, mixing and mechanical handling of farm products.

401. Mechanics of Tractor Power (5). Lec. 3, Lab. 4. Winter. Pr., ME 310, junior standing. Renoll
Construction, design, and operating principles of the farm tractor. Mechanics of tractor stability, traction, weight transfer, and safety. Tractor efficiency as influenced by fuel, ignition, temperature, and power transmissions.

403. Soil and Water Engineering (5). Lec. 4, Lab. 3. Fall. Pr., CE 210, ME 434, junior standing. Neal
A study of the relationship of soils, rainfall, runoff and topography to drainage and terrace systems design.

404. Agricultural Process Engineering (5). Lec. 3, Lab. 4. Spring. Pr., ME 310, junior standing. Richardson
Design, selection and operation of environmental control equipment, processing and materials handling systems for use on the farm.

405. Irrigation Design (5). Spring. Pr., AN 403 and junior standing. Neal
The design of flood, furrow, and sprinkler irrigation systems, including the development of water supply sources, pumping and power requirements; the determination of irrigation efficiencies and techniques.

406. Dairy Engineering (3). Lec. 2, Lab. 3. Winter. Richardson
Selection, operation, and servicing of steam generating and refrigerating plants, indicating and recording instruments, design and arrangements of dairy buildings.

407. Agricultural Machinery Design Analysis (3). Lec. 2, Lab. 3. Fall, Spring. Pr., AN 201, junior standing. Renoll
Design, construction, and comparative analysis of component parts of farm machines other than tractors. Includes use of dynamometers, electrical resistance strain gages and functional analysis instrumentation.

408. Agricultural Tractor Design Analysis (3). Lec. 2, Lab. 3. Winter, Spring. Pr., AN 401, junior standing. Renoll
Use of electronic analysis instrumentation equipment in the evaluation of tractor design elements and construction principles with respect to thermal and tractive efficiency, vehicle stability, tractor hitches and weight distribution.

409. Irrigation Design Lab. (2). Lab. 5. Spring. Pr., AN 403 and co-requisite or prerequisite AN 405. Neal
Design and calibration of water measuring devices used in irrigation, such as weirs, flumes, orifices and siphons; stream flow measurement; techniques of measuring soil infiltration and water holding capacity. Selection and design of irrigation systems for optimum performance and the application of engineering techniques to land forming.

422. Farm Power and Equipment (5). Summer. ½ quarter course. Pr., AN 303, junior standing. For Vocational Agriculture Teachers. Staff

424. Farm Electrification (5). Summer. ½ quarter course. Pr., junior standing. For Vocational Agriculture Teachers. Richardson

426. Farm Irrigation (5). Summer. ½ quarter course. Pr., junior standing. For Vocational Agriculture Teachers. Neal

432. Engineering in Agriculture I—Agricultural Machinery (3). Lec.-Dem. 4. Pr., graduate standing. Renoll
The utilization of modern agricultural machinery on the farm with emphasis on safety, management, costs, economic justification, and principles of operation. (Credit for both AN 432 and AN 422 may not be used to meet requirements for the Master's degree.)

434. Engineering in Agriculture II—Agricultural Power (3). Lec.-Dem. 4. Pr., graduate standing. Renoll
Study of farm tractor and power units used on the farm; includes the basic principles of operation with major interest toward lubrication, costs, operational problems, safety and a comparison of gasoline, Diesel, and LP gas fuels, and units. (Credit for both AN 434 and AN 422 may not be used to meet requirements for the Master's degree.)

COURSES PRIMARILY FOR GRADUATE STUDENTS

601. Land Conservation and Development (5). Lec. 4, Lab. 3. Pr., AN 403. Neal
Fundamental problems of hydrology and soil physics applied to the soil erosion process and engineering practices for erosion control. Principles of design for farm drainage and irrigation systems.

602. Advanced Farm Power and Machinery (5). Arrange. Pr., AN 201 and 401. Renoll
Principles of operation and analysis of design of basic machine elements, hydraulic systems and functional requirements of farm power units, agricultural machinery and materials of construction.

603. Theory of Irrigation and Drainage (5). Pr., AN 405, CE 612 and AY 455. Staff
Analytical, numerical, and analogue solutions of flow of liquids in porous media problems with special application to drainage and irrigation, unsaturated flow, in situ measurement of soil permeability, principles and applications of centrifugal, mixed flow, and propeller pumps.

604. Agricultural Engineering Problems. (Credit to be arranged). Pr., AN 404. Staff
Special advanced engineering and design problems in the application of electricity to farm uses, the design and construction of farm structures and processing equipment, the physical properties of soil in relation to tillage implement design and the application of modern testing and measuring techniques to agricultural engineering research.

605. Soil Dynamics (5). Pr., AY 455. Kummer
Analysis and measurements of soil reactions, as affected by the physical properties of the soil, when subjected to forces imposed by tillage implements and traction devices. Among the soil physical properties considered are shear, cohesion, adhesion, consolidation, plasticity and abrasion.

608. Seminar. Credit to be arranged. All quarters. Staff
Reviews and discussions of research techniques, current scientific literature and recent developments in agricultural engineering research.

699. Research and Thesis. Credit to be arranged. Kummer
May be taken more than one quarter.

799. Doctoral Research and Dissertation. Credit to be arranged. Staff

Agronomy and Soils (AY)

Professors Rogers, Donnelly, Ensminger, Hood, McCain, Rouse, Scarsbrook, Sturkie and Wear
Associate Professors Adams, Dixon, Hiltbold, Hoveland, Johnson, Patterson
Assistant Professor Patrick

Agronomy is the science of soil management and field crop production. Courses in crops are designed to give a student a thorough knowledge of the principles involved in the economic production of feed, fiber, pasture and other forage crops. Courses in soils give special attention to the principles of soil formation and classification, and soil fertility and management, including soil conservation and the use of fertilizers.

These courses are designed to prepare students for farming; for employment in related industries such as the fertilizer, seed and soil management services; and for employment by state and federal agencies such as the Extension Service, Experiment Station, Soil Conservation Service, and Farm and Home Administration.

The Department offers graduate work toward the Master of Science and Doctor of Philosophy degrees. An option may be taken in crops or soils. Advanced courses in Agronomy and related fields fulfill the needs of graduate students in the following specialized areas: soil chemistry; soil fertility; soil microbiology; soil physics; soil morphology; genesis and classification; plant breeding; forage, fiber and grain crop production; weed control; crop ecology including agroclimatology; and turf management. Prospective students are referred to the current Bulletin of the Graduate School for details.

201. Grain Crops (5). Lec. 4, Lab. 2. All quarters.
This course deals with the fundamental factors involved in the economical production of corn, small grains, grain sorghum, peanuts and soybeans.

304. General Soils (5). Lec. 4, Lab. 2. Fall, Winter, Spring. Pr., CH 105 and 105L.
A survey course dealing with the formation, classification, composition, properties, management, fertility, and conservation of soils in relation to the growth of plants.

305. General Soils (5). Lec. 4, Lab. 2. Winter. Pr., CH 103-104.
A survey course dealing with the formation, classification, composition and properties of soils and their influence on vegetative growth and development on forest lands. Open only to students in Forestry.

306. Soil Morphology and Survey (3). Lec. 1, Lab. 4. Spring. Pr., AY 304, 305 or 307.
Specially designed to fit students for employment as soil surveyors in state and federal agencies. To be given only when a sufficient number of students elect it.

307. General Soils (5). Lec. 4, Lab. 2. Fall, Spring. Pr., CH 103-104.
Survey of the general field of soils including genesis, classification and fertility. Open only to students in Vocational Agriculture.

401. Forage Crops (5). Lec. 4, Lab. 2. Fall, Winter, Spring, Summer. Pr., junior standing.
This course deals with both grass and legume forage crops. The crops are considered from the standpoint of (a) pasture crops, (b) hay and silage crops, (c) soil improving crops.

402. Soil Fertility (5). Lec. 5. Spring. Pr., AY 304, 305 or 307, and junior standing.
Lectures, demonstrations and problems designed to illustrate principles of soil fertility as related to fertilizer practices and crop production. An advanced course required of all students majoring in Agronomy and Soils. Either AY 402 or AY 407, but not both, may be used to satisfy the minimum requirement for the Master's degree.

403. Grazing Systems in Alabama (5). Lec. 3, Lab. 4. Spring. Pr., AY 401, and junior standing.
A study of the establishment, maintenance, and management of crops used in grazing systems in the various soil and geographic areas of Alabama.

404. Cotton Production (5). Lec. 5. Fall, Winter. Pr., junior standing.
Most of the time will be devoted to cotton. A limited amount of time will be devoted to other fiber crops.

405. Turf and Its Management (3). Lec. 2, Lab. 2. Fall, odd years. Pr., AY 304, BY 306, BY 309, and junior standing.
A consideration of species of turf crops in relation to latitude, soil type, shading, establishment, fertility, and maintenance.

406. Commercial Fertilizers (3). Lec. 3. Winter. Pr., AY 304, 305 or 307, or by special permission of instructor; also junior standing.
A study of raw material reserves; manufacture, and properties of fertilizer materials; properties and formulation of mixtures; relative efficiency of various plant nutrient sources; and related agronomic problems.

407. Soil Management (5). Lec. 5. Summer. Pr., AY 304, AY 305, or AY 307, and junior standing.
A study of the physical, chemical and biological properties of soils and their management. An advanced course designed for students in Vocational Agriculture. Either AY 402 or AY 407, but not both, may be used to satisfy the minimum requirement for the Master's degree.

408. Soil Resources and Conservation (5). Lec. 4, Lab. 2. Pr., AY 304, 305 or 307 and junior standing.
Soils as a natural resource for land-use planning; their classification and management for crop production, recreation, and urban and industrial development.

409. Seed Production (3). Lec. 2, Lab. 2. Spring, odd years. Pr., AY 201, 401 and junior standing.
A study of methods and factors affecting production, storage, and processing seed.

410. Methods of Plant Breeding (3). Lec. 2, Lab. 2. Fall, even years. Pr., ZY 300 and junior standing.
A general course designed to acquaint students with the principles and methods of plant breeding.

411. Soil Management (3). Lec. 4. Pr., AY 304, 305 or 307 and graduate standing.
A study of the classification, physical properties, moisture, organic matter, and pH of soils, and their management with respect to these properties. (Credit for both AY 411 and AY 402, or AY 407 may not be used to meet requirements for the Master's degree.)

412. Advanced Forage Crops (3). Lec. 4. Pr., AY 401 and graduate standing.
A study of the forage species and mixtures, their establishment, maintenance and management for different soils and systems of grazing. (Credit for both AY 412 and AY 403 may not be used to meet requirements for the Master's degree.)

453. Geomorphology (5). Lec. 4, Lab. 2. Winter, even years. Pr., AY 304, 306, and senior standing.
A study of the structure and physiography of the earth's crust and its relation to soil parent material.

454. Soil Genesis and Classification (5). Spring, even years. Pr., AY 453 and senior standing.
A study of the factors and processes influencing soil formation, and the systems of classification.

455. Soil Physics (5). Winter, even years. Pr., AY 304 and junior standing.
Lecture and demonstrations to illustrate fundamental physical properties of soils.

GRADUATE COURSES

601. Agronomy Problems (1-5). Credit to be arranged.
Conferences, problems, and assigned reading in soils and crops, including results of agronomic research from the substations and experiment fields.

602. Plant Biological Chemistry (5). Fall, odd years. Pr., CH 203 or CH 207.
Biochemical reactions and factors influencing them. Major emphasis is placed on those reactions concerning plants. This course will be given only when a sufficient number of students want the course. The course is required of graduate students majoring in Agronomy and Soils.

606. Soil Microbiology (5). Lec. 3, Lab. 4. Spring, odd years. Pr., AY 402 and VM 200.
A study of soil microorganisms and their physiological processes related to soil development and plant nutrition. The role of microorganisms affecting the chemical and physical properties of soils will be studied, with emphasis on the cyclical transformations of nitrogen, phosphorus, carbon, and sulfur. (To be given in alternate years.)

608. Experimental Methods (5). Fall, even years.
This course deals with experimentation in the agricultural sciences including experimental techniques, interpretation of research data, use of library references and preparation of publications; and consists of problems, assigned readings, and lectures. Required of all students majoring in Agronomy and Soils. This course will be given only when sufficient students want the course to justify its being taught, but will not be given more frequently than once a year.

613. Theories and Applications in Agronomic Research (2).

615. Seminar in Genetics (1). Pr., ZY 300.
Reports will be presented by students and staff members on current research and the literature in the field of genetics.

616. Advanced Plant Breeding (5). Lec. 4, Lab. 2. Winter, even years. Pr., ZY 300.
Principles, methods, and techniques involved in plant breeding. Laboratory work will consist of studying active plant breeding programs, studying pollination techniques, and making pollinations. A term paper will be required.

617. Experimental Evolution (5). Spring, even years. Pr., ZY 300 and AY 616.
A study of the factors affecting the evolution of species.

618. Crop Ecology (5). Winter, even years. Pr., BY 306, 413, and AY 402.
A study of environmental factors influencing the growing of crop plants.

619. Theories in Forage Crops Management (5). Lec. 3, Lab. 4. Winter, odd years. Pr., BY 306, 309, AY 402 and 403.
The principles involved in successful establishment, maintenance and management of crops used for grazing, hay and silage.

620. Philosophy and Interpretation of Experimental Research (3). Lec. 4. Pr., graduate standing.
A systematic study of the principles and methods of experimental research; the utility of experimental designs; and the utilization of statistical and graphical aids in the interpretation of data. Mathematical comparisons of the efficiency of designs and calculations of statistical values are not a part of this course.

654. Advanced Soil Fertility (5). Spring, odd years. Pr., CH 206, AY 402 and 606.
Composition and properties of soils in relation to the nutrition and growth of plants.

655. Soil and Plant Analysis (5). Lec. 2, Lab. 6. Winter, odd years. Pr., CH 206 and AY 402.
Principles, methods, and techniques of quantitative chemical analysis of soils and plants applicable to soil science.

656. Soil Mineralogy (5). Lec. 4, Lab. 2. Fall, even years.
A study of the crystal structure and properties of the more important soil and clay minerals combined with identification techniques involving X-ray, differential thermal analysis, electron microscopy and petrographic microscopy.

657. Advanced Soil Chemistry (5). Fall, odd years. Pr., CH 409, AY 655 and 656.
Physico-chemical properties of soil colloids.

658. Advanced Soil Physics (5). Lec. 2, Lab. 6. Pr., MH 263, PS 205-206, and AY 455.
The physical properties of soils in relation to plant growth. Emphasis is placed on methods of measuring soil physical properties and the interpretation of these measurements in terms of plant growth.

699. Research and Thesis. Credit to be arranged.
Research and thesis on problems related to crop production, plant breeding, soil fertility and soil chemistry.

799. Doctoral Research and Dissertation. Credit to be arranged.

Air Science (AF)

BASIC COURSE

First Year (Freshman)

Air Science 1.

101. Foundation of Aerospace Power (1). Lec. 3, Drill 2.
An introductory examination of the factors of aerospace power, major ideological conflicts, requirements for military forces in being, responsibilities of citizenship, development and traditions of the military profession, role and attributes of the professional officer in American democracy, organization of the armed forces as factors in the preservation of national security, and the United States Air Force.

102. Leadership Laboratory (1). Drill 2.
Drill field activities of the cadet flight, squadron, group, and wing.

103. Leadership Laboratory (1). Drill 2.
Drill field activities of the cadet flight, squadron, group, and wing.

Second Year (Sophomore)

Air Science 2. (Prerequisite Air Science 1 or as determined by the Professor of Air Science.)

201. Aerospace Weapons Systems (1). Lec. 2, Drill 2.
An introductory study of missiles, aircraft, propulsion, guidance, warheads, nuclear explosions, chemical and biological agents.

202. Aerospace Weapons Systems (1). Lec. 2, Drill 2.
An introductory study of targeting, logistics, and strategic, tactical, and defense warfare.

203. Aerospace Weapons Systems (1). Lec. 2, Drill 2.
An introductory study of man and weapons in space, vehicles, environment, implications; and contemporary military.

ADVANCED COURSE

Third Year (Junior)

Air Science 3. (Prerequisite Air Science 1 and 2, or as determined by the Professor of Air Science.)

301. Air Force Officer Development (3). Lec. 4, Drill 2.
A study of staff work, with emphasis on communication and problem solving. The course includes both principles and practice.

302. Air Force Officer Development (3). Lec. 4, Drill 2.
A study of staff work with emphasis on military correspondence, report writing, and group problem solving. Included is an introduction to military justice.

303. Air Force Officer Development (3). Lec. 4, Drill 2.
A study of the basic psychological and sociological principles of leadership.

Fourth Year (Senior)

Air Science 4. (Prerequisite Air Science 3 or as determined by the Professor of Air Science.)

401. Weather and Navigation (3). Lec. 4, Drill 2.
An introduction to the weather and navigational aspects of airmanship, such as temperature, pressure, air masses, precipitation, weather charts, and dead reckoning navigation. Military aspects of world political geography, dealing with globes and maps and the geography of climate.

402. Military Aspects of World Political Geography (3). Lec. 4, Drill 2.
Concepts, maps, and charts; factors of power, and geographic influences upon political problems with a geopolitical analysis of the strategic areas.

403. International Relations (3). Lec. 4, Drill 2.
A study of the major factors underlying international tensions and attempts to alleviate these tensions. The Air Force Officer—material to help the cadet make a rapid, effective adjustment to active duty as an officer in the United States Air Force.

Animal Science (AH)

Professors Warren, Anthony, and Salmon
Associate Professors Squiers, Turney, Patterson, Strength, Tucker and Wiggins
Assistant Professors Harris and Smith
Instructor Gray

The department offers training in the theory and practices of Animal Science. Courses are planned to meet the needs of students who expect to become livestock farmers and farm managers, county agents, teachers of vocational agriculture, college teachers, research workers, livestock extension specialists, or employees in related commercial industries. Graduate curricula leading to the Master of Science and Doctor of Philosophy degrees are offered especially for students who want to prepare for careers in research or college teaching.

200. Introductory Animal Husbandry (5). Lec. 4, Lab. 2. Fall, Winter, Spring.
A basic course designed to orient the student and provide some understanding of the scope and importance of the field. The importance of livestock to agriculture and to the nutrition of people. The role of nutrition, breeding, selection and management in livestock production.

204. Animal Biochemistry and Nutrition (5). Fall, Winter, Spring. Pr., CH 104.
Principles of animal biochemistry and nutrition and the nutritional requirements of farm animals.

301. Livestock Judging (3). Lec. 1, Lab. 4. Winter, Spring. Pr., AH 200.
Theory and practice in the selection of beef cattle, swine, sheep, and horses.

302. Feeds and Feeding (3). Fall, Spring. Pr., AH 204.
Principles and practices of balancing and compounding of rations for beef cattle, sheep, and swine.

303. Livestock Production (5). Lec. 4, Lab. 2. Winter. Pr., AH 204.
Efficient practices for selection and management of beef cattle, sheep, and swine. For Agricultural Education students and other students whose curricula do not include AH 401 and AH 402. Ten or more hours of credit in AH 401, AH 402, or AH 405 excludes credit for AH 303.

304. Meats (3). Lec. 1, Lab. 4. Fall, Spring. Pr., AH 200.
Study and practice of slaughtering and cutting carcasses of cattle, sheep and hogs. Curing and processing procedures will be considered. Factors affecting slaughtering and cutting yields and costs and the basic principles of quality meat selection and grading will be stressed.

308. Meats Judging (3). Lec. 1, Lab. 4. Fall. Pr., AH 304.
Theory and practice in the selection and grading of carcasses and wholesale cuts of beef, pork, and lamb.

401. Swine Production (5). Lec. 4, Lab. 2. Fall, Spring. Pr., AH 200, AH 204, junior standing.
The practical problems involved in the breeding, feeding, and management of swine for economic production.

402. Beef Cattle Production (5). Lec. 4, Lab. 2. Fall, Winter. Pr., AH 200, AH 204, and junior standing.
The practical phases of breeding, feeding, and management of beef cattle for economic production.

403. Animal Breeding (5). Winter. Pr., ZY 300 and junior standing.
The application of genetic principles to the breeding of cattle, sheep, and swine. Studies of different systems of breeding and selection and their related efficiencies for livestock improvement.

404. Market Classes and Grades of Livestock (3). Lec. 2, Lab. 2. Fall, Spring. Pr., AH 200.
Grading, classing, and marketing livestock.

405. Sheep Production (5). Lec. 4, Lab. 2. Fall. Pr., AH 200, AH 204, and junior standing.
Types and breeds of sheep; buildings and equipment; types of sheep raising and flock management; nutritional requirements and feeding; sheep breeding, selection and culling; performance testing; wool grading and marketing; lamb grading and marketing; common diseases and parasites and their control.

406. Reproduction in Farm Animals (5). Lec. 4, Lab. 2. Spring. Pr., junior standing.
Anatomy and physiology of the male and female reproductive tract; hormones governing reproduction; estrus and estrus cycle; ovulation, mating, gestation, parturition; lactation; sperm physiology; collection, storage and dilution of semen; artificial insemination; factors affecting fertility; causes of sterility in males and females, pregnancy tests.

407. Advanced Livestock Judging (3). Lec. 1, Lab. 4. Fall. Pr., AH 301 and approval of instructor.
An advanced course in the selection and grading of livestock.

408. Applied Animal Nutrition (5). Winter. Pr., AH 302 and senior standing.
An advanced study of the principles of animal nutrition and their application to the production of farm animals, including the study of physiology of nutrition, metabolism of nutrients and recent nutritional developments.

411. Undergraduate Seminar (1). Pr., senior standing.
Lectures, discussions and literature reviews by staff, students and guest lecturers.

450. Advanced Animal Nutrition and Livestock Feeding (3). Lec. 4. Pr., graduate standing.
Principles of nutrition, nutritional requirements, compounding of rations, role of additives in livestock feeds and study of newer research findings.

451. Breeding and Genetic Improvement of Farm Animals (3). Lec. 4. Pr., graduate standing.
A study of basic genetic principles and their application to the breeding of farm animals. Systems of breeding and selection.

GRADUATE COURSES

(Graduate Standing Required)

603. Methods of Nutrition and Biochemistry (5).
Methodology including chemical, photometric, biological, and microbiological procedures used in nutritional and biochemical investigations.

604. Proteins, Amino Acids and Related Nitrogeneous Compounds (5). Pr., CH 418 or equivalent.
The nutritional importance of these substances and their relation to growth, reproduction and health of animals.

605. Carbohydrates and Fats and Energy Metabolism (5). Pr., CH 418 or equivalent.
The contribution of carbohydrates and fats as cell constituents and sources of fuel in animal metabolism.

607. Comparative Animal Nutrition (5). Pr., AH 408.
Advanced studies of the comparative nutritional requirements in beef cattle, sheep, swine and laboratory animals.

608. Advanced Reproduction in Farm Animals (5). Pr., AH 406, ZY 424.
Physiology and endocrinology of reproduction.

609. Advanced Beef Cattle Production (5).
Advanced studies relating to the production of beef cattle.

610. Advanced Swine Production (5).
Advanced studies of swine production and its place in Alabama agriculture.

611. Seminar. Credit to be arranged.

612. Genetics of Populations (5). Pr., AH 403.
Genetic composition of populations and factors affecting rates of change and conditions of equilibrium.

613. Vitamins (5). Pr., CH 208 and satisfactory courses in animal nutrition.
The specific functions and chemistry of the vitamins.

614. Minerals (5). Pr., CH 208 and satisfactory courses in animal nutrition.
The specific functions of minerals in animal metabolism.

615. Nutritional Interrelations (5). Pr., CH 420.
Specific metabolic relationships among vitamins, amino acids, fats, carbohydrates and minerals and the effect of nutritional antagonists.

616. Enzymes (5). Pr., CH 418 or equivalent.
The chemistry, mechanism of action and role of enzymes in metabolism.

617. Nutritional Microbiology (5). Pr., 5 hrs. of microbiology and departmental approval.
The anatomy, growth and metabolism of the bacterial cell with emphasis on the biochemical makeup of the cell and the regulation of its activities; the use of microorganisms for quantitative assays.

618. Current Problems and Practices in Livestock Farming (5). Summer.
Intensive studies of new research findings and their application to livestock production on Alabama farms. Primarily for Vocational Agriculture Teachers and County Extension Workers.

619. Experimental Methods (5). Pr., Satisfactory courses in statistics.
Research methods in the animal sciences including experimental techniques, interpretation of research data and preparation of publications.

620. Nutritional Pathology I (5). Winter Quarter by arrangement. Pr., VM 418 and satisfactory courses in biochemistry.
A comprehensive study of gross and microscopic pathology of nutritional diseases of experimental and domestic animals.

621. Nutritional Pathology II (5). Spring Quarter by arrangement. Pr., AH 620.
Evaluation and application of chemical, histochemical and cytochemical methods in localization of enzymes, nucleic acids, amino acids and other cellular constituents in tissues of normal animals and those with nutritional imbalances.

690. Special Problems. (1-5 hours. Credit to be arranged).
Conference problems, assigned reading and reports in one or more of the following major fields: (a) animal biochemistry and nutrition, (b) animal breeding and genetics, (c) physiology of reproduction, (d) nutritional pathology, and (e) animal production.

699. Research and Thesis. Credit to be arranged.
Research and thesis may be on technical laboratory problems or on problems directly related to beef cattle, sheep or swine.

799. Doctoral Research and Dissertation. Credit to be arranged.

Architecture (AR)

Head Professor Kelley
Professors Burkhardt and Elliott
Associate Professors Layman, Prestridge, and Wells
Assistant Professors Alexander, D. Brisson, Knowles, N. Orsini, Thomasson, and Turner
Intructors H. Brisson°, E. Orsini°

101-2-3. Basic Design (6-6-6). Lec. 1-1-1, Lab. 15-15-15.
Correlated study of the fundamental relationships basic to all design problems—9 hours per week in design laboratory. Study and practice in freehand representation with various media—6 hours per week in the art studio. One hour per week lecture and discussion. Required for all first year students in AR and ID. (For a limited number of students with advanced standing, these three courses may be completed in sequence in a Summer Quarter.)

201-2-3. Architectural Design (4-4-4). Lec. 1-1-1, Lab. 9-9-9. Pr., AR 103.
Principles of spatial composition and structural organization; approaches to architectural design by the analysis of design determinants—9 hours per week in design laborarory. One hour per week of discussions and laboratory criticism.

206-7. Interior Design (4-4). Lec. 1-1, Lab. 9-9. Pr., AR 201.
Principles of spatial composition and structural organization; approaches to a design by the analysis of design determinants; solution of simple design projects, furnishings and color. One hour per week of discussions and laboratory criticisms.

215-16. Elements of Interior Design (2-2). Lec. 2-2. Pr., AR 103.
An introductory survey of the profession of interior design including professional procedures, relationships, ethics, correlation with architecture and other arts. Lectures, readings, discussions and research.

233. Materials and Construction (5). Lec. 5.
Physical and structural properties of natural and synthetic building materials; analysis of their limitations and combinations in the construction of buildings; systems of construction. Lectures, readings, research and reports.

271-2-3. Descriptive Drawing (2-2-2). Lab. 6-6-6. Pr., AR 103.
Fundamentals of drawing structures, developing basic abilities which may be applied in principle to the drawing problems that an architectural designer may face. Various media, discussions, exercises.

301-2-3. Architectural Design (5-5-5). Lab. 15-15-15. Pr., AR 203. Coreq., BT 220. Admission only upon recommendation of the Committee on Design.
Analysis and solution of buildings of moderate complexity, with emphasis on domestic, civic, and recreational problems; increased attention to construction and finish details. Research, discussions, drawings, models.

305-6-7. Interior Design (5-5-5). Lab. 15-15-15. Pr., AR 207.
Analysis and solution of interiors of moderate complexity, with emphasis on domestic and commercial problems. Research, discussion, drawings, models.

360. Appreciation of Architecture (3). General elective. Pr., sophomore standing. (Not open to AR and ID students.)
A survey of architectural development with particular attention to American and contemporary examples. Illustrated lectures, readings, essays.

361-2-3. History and Theory of Architecture (3-3-3). Pr., AR 203, BT 223.
An analysis of cultural institutions of the past and the study of the principles of planning and architectural composition, town planning, and landscape architecture as resulting from these forces and structural knowledge of the time. Study of the Ancient, Medieval, and Oriental cultures. Illustrated lectures, readings, drawings, and reports.

365-6. Period Interiors (2-2).
A survey of the development of interior spaces, furniture, fabrics, and accessories from pre-Renaissance to 1900. Illustrated lectures, readings, reports, and field trips.

367. Contemporary Interiors (2). Lec. 2. Pr., AR 366.
A survey of the fundamental aspects of interior design, spatial order and characteristics, furniture and fabric design, from 1900 to date. Illustrated lectures, readings, reports.

370. Spaces for Living (3). General elective. Pr., junior standing. (Not open to AR and ID students.)
A survey of contemporary concepts of design, spatial organization, materials, furnishings, and gardens in relation to all major types of residential architecture. Illustrated lectures, readings, reports.

° Temporary.

374. Planning (2). Lab. 6. Coreq., EC 206 or SY 311.
Introduction to principles of city and regional planning. Consideration of the influences which shape urban development.

375. Planning (5). Lec. 3, Lab. 6. Pr., AR 374.
Lectures on the historical development of planning and urban design. Research in regional and local effects of planning. Practical problems in urban design, group design, systems of communication, urban patterns and controls.

390. Field Project (2). Required of students in Interior Design for admission to AR 406.
Summer experience (2 months minimum) with an interior design practitioner or commercial interior design department. The project is subject to approval by the Committee on Professional Practice.

401-2-3. Architectural Design (5-5-5). Lab. 15-15-15. Pr., AR 303, Coreq., BT 313.
Analysis and solution of buildings of advanced complexity, with increased emphasis on the relation between space organization and the structural system. Research, discussions, drawings, models.

405-6. Interior Design (5-5). Lab. 15-15. Pr., AR 307.
Analysis and solution of interiors of advanced complexity, with emphasis on institutional and public problems. Research, discussions, drawings, models.

407. Interior Design (5). Lab. 15. Pr., AR 406, Coreq., AR 432, AR 435.
The development of a major design problem under the direction of the Committee on Design. Drawings, models, details; oral presentation for jury consideration.

408. Interior Design Research (2). Lab. 6. Pr., AR 405. Coreq., AR 406, AR 442.
The selection and comprehensive programming of a terminal problem in interior design to be executed in AR 407.

423. Professional Practice (2). Lab. 6.
Emphasis on site engineering, mathematics of surveying in relation to interpretation of geographic and physical features; grading, drainage, and codes. Lectures, readings, reports.

432. Materials and Finishes (2). Lab. 6. Coreq., AR 407.
Detailed determination of materials, finishes, costs as related to terminal problems accomplished under AR 407.

435. Methods of Interior Design (5). Lab. 15. Coreq., AR 407.
Detailed design of furniture and/or furnishings included in terminal problem (AR 407), together with fabrication of at least one item of furniture or furnishings at scale to be determined by staff.

441-42. Professional Practice (2-2). Lab. 6-6.
Office procedure and methods for interior designers; the technique and execution of working drawings for buildings, cabinetry and interior details; specifications. Discussions, drawings, inspections, reports.

461-2-3. History and Theory of Architecture IV-V-VI (3-3-3). Pr., AR 363.
Continuation of AR 363. Study of Renaissance, Baroque, Colonial American, and Modern cultures. Illustrated lectures, readings, drawings, and reports.

471. Town Planning (5). Pr., 4th year standing.
Land uses; use standards and controls; communication systems; growth, health, and decay of urban communities; remedial actions. Illustrated lectures, readings, reports.

490. Field Project (2). For students of Architecture.
Study of the correlation and interpretation of working drawings and specifications on an architectural project under construction. Field work and reports will be approved by the Committee on Professional Practice. (To be completed as prerequisite to AR 502.)

501. Architectural Design (5). Lab. 15. Pr., AR 403. Admission only upon recommendation of the Committee on Design.
Analysis and design of buildings of advanced complexity, with emphasis on multi-story commercial and institutional projects; group planning and advanced site study. Research, reports, discussions, drawings, models. A scheme for a building executed as a minor problem in this course will be fully developed in AR 502.

502. Architectural Design (5). Lab. 15. Pr., AR 490, AR 501, AR 521, BT 541, BT 413. Coreq., AR 522 and AR 532.
The coordinated design of a major architectural project with full presentation. This course is designed to be correlated with work in AR 522 and AR 532, under the direction of the Committee on Design.

503. Architectural Design (7). Lab. 21. Pr., AR 502, AR 512.
The development of a major design problem under direction of the Committee on Design. Drawings, models, details, and written explanations, oral presentation for jury consideration.

512. Design Research (2). Lab. 6. Pr., AR 490, AR 501. Coreq., AR 502.
The selection and comprehensive programming of a terminal problem in architecture to be executed in AR 503.

521-2. Professional Practice (5-5). Lec. 3, Lab. 6. Coreq., to AR 522; AR 502, AR 532.
Study of procedures in architectural practice; construction methods, estimation of quantities and costs; preparation of specifications and working drawings. Office organization; legal requirements; professional organizations and relations; civic responsibility.

532. Materials and Finishes (2). Lab. 6. Coreq., AR 502, AR 522.
Analysis and assembly of materials and finishes used in the building designed in AR 502. Lecture, research, and reports.

558. Seminar in Contemporary Concepts (5). Pr., AR 463.
A study of current achievements in world architecture with emphasis on broad movements and emerging patterns. Research, directed reading, reports, and discussion.

559. Seminar in Historical Problems (5). Pr., AR 463.
Open to students who have shown ability, initiative, and industry in developing individual projects. Research, reports, and drawings under supervision on approved topics.

560. The Architect and Society (2). Pr., 4th year standing.
A study of the social, economic, and political factors which have influenced the contemporary expression of architectural design and practice. Analysis of great works and philosophies which led the way to new approaches in design. Appreciation of esthetics and function as applied to form. Lectures, outside reading and reports.

561. Seminar in Urban Design (2). Pr., 4th year standing.
Directed reading and discussion of contemporary developments in urban planning concepts and solutions. Reports and drawings.

562. Seminar in Technological Problems (3). Pr., 4th year standing.
A study of current technological advances in the building industry and evaluation of their impact upon architecture.

571. Honors Program. Credit to be arranged up to 5 hrs. Pr., 4th year standing.
Admission only by the Committee on Honors Program. Development of an area of concentration through independent study. Scope of work and its evaluation to be determined by the Committee. May be taken more than one quarter.

Art (AT)

Head Professor Applebee
Professor Sykes
Associate Professors Abney, Kettunen, Schaer and Williams*
*Assistant Professors Cheney**, McIvor and Pfeil**
Intructors Gibson, Kinnaird, Mitchell, and Walker*
Graduate Assistant Beck

105. Drawing I (5). Lab. 15.
Representational drawing. Line, light and dark.

106. Drawing II (5). Lec. 2, Lab. 9. Pr., AT 105.
Emphasis on creativity and pictorial organization. Interpretive drawing.

107. Drawing III (5). Lab. 15. Pr., AT 105.
Drawing in various media from casts and models to develop feeling for form, movement and proportions.

113. Perspective (3). Lec. 2, Lab. 3. Pr., AT 105.
Linear perspective. Shadows. Reflections.

181. Design Fundamentals I (5). Lec. 2, Lab. 9.
Plastic elements. Relationship of the arts. Problems in basic design.

182. Design Fundamentals II (5). Lab. 15. Pr., AT 105 and 181.
Relationship of materials and techniques to form. Perception theories. Applied problems.

205. Figure Drawing I (5). Lab. 15. Pr., AT 107.
Drawing from the model in various media with emphasis on proportions, interpretation and expression.

211. Lettering (5). Lec. 2, Lab. 9. Pr., AT 181.
Historical development of letters. Anatomy of letters. Spacing. Drill exercises with pen. Fundamental alphabets and compositions of body matter lettered directly.

212. Graphic Processes (5). Lec. 5. Pr. sophomore standing.
Printing processes, photomechanical reproduction, copy-fitting, paper manufacture and usage, related subjects.

215. Artistic Anatomy (5). Lec. 3, Lab. 6. Pr., AT 205.
Lectures deal with form, function and manner of operation of skeletal and muscular parts of the body. Drawing from casts, models and skeleton.

* Temporary.
** On leave.

216. Materials and Processes (5). Lec. 5. Pr., sophomore standing.
The properties and use of materials in manufacture and a study of the various machine and tool processes used by industry.

217. Delineation (5). Lab. 15. Pr., AT 222.
The development of facility and understanding in the drawing of three dimensional forms. Emphasis on the function and the techniques of presentation.

222. Painting I (5). Lab. 15. Pr., AT 106 and 181.
Transparent water color. Study of the medium and of picture structure. Exercises in still life, figure and landscape painting.

224. Painting II (5). Lab. 15. Pr., AT 222.
Opaque water color. Techniques and properties of the medium. Objective and subjective handlings as a further extension and application of the plastic elements.

227. Sculpture I (5). Lab. 15.
Three dimensional expression. Clay and other media.

271. Introduction to Industrial Design (5). Lec. 2, Lab. 8. Pr., EG 102 and AT 182.
Introduction to the structure and process of industrial design. Survey of philosophy and theory of design.

305. Printmaking I (5). Lab. 15. Pr., AT 381.
Woodblocks, linoleum cuts, wood engraving and lithography. Stress on pictorial design concepts.

307-8. Figure Drawing II and III (5-5). Lab. 15-15. Pr., AT 205.
Drawing from the model in various media, with emphasis on construction, interpretation and expression.

317. Packaging (5). Pr., junior standing and AT 211.
The study of all types of package design and the materials used. New applications to everyday products.

322. Painting III (5). Lab. 15. Pr., AT 222.
Introduction to oil painting. Exploiting of materials and techniques with still life and the figure as a means for aesthetic exploration.

324. Painting IV (5). Lab. 15. Pr., AT 224 and 322.
Painting with optional media and subject matter.

327. Sculpture II (5). Lab. 15. Pr., AT 227.
Advanced problems in three-dimensional expression. Emphasis placed on idea, form and technique.

332. American Painting and Sculpture (3). General elective.
A survey of American art and artists from the Colonial period to the present day. Illustrated lectures, readings.

338. Art History I (5). Pr., sophomore standing.
The chronological development of Western painting and sculpture from pre-historic through modern times as related to the cultural setting. Illustrated lectures.

339. Art History II (5). Pr., AT 338.
An examination of ideas, philosophies common to all periods of art history, and a comparison of periods in terms other than chronological development. Illustrated lectures, readings, drawings, and reports.

342. Elementary School Art (5). Lec. 2, Lab. 8.
Materials and methods for the development of art activities in elementary schools; exercises in expressive drawing, painting, design and simple lettering.

355. Illustration I (5). Lab. 15. Pr., AT 215.
Basic problems in illustration emphasizing both esthetic and functional aspects. Drawings and designs for line and halftone reproductions.

361. Fashion I (5). Lab. 15. Pr., AT 182, and AT 215.
Drawing the fashion figure, employing basic types of rendering used in fashion advertising.

371. Industrial Design I (5). Lab. 15. Pr., AT 271. Admission only upon recommendation of the committee on design.
Abstract design exercises. Design of simple objects.

372. Industrial Design II (5). Lab. 15. Pr., AT 371 and PS 204.
Re-design of technical objects. Development of design methods.

373. Industrial Design III (5). Lab. 15. Pr., AT 372.
Design of domestic products. Analysis and integration of total factors involved.

381. Visual Design I (5). Lab. 15. Pr., AT 182, AT 211, and AT 212. Admission only upon recommendation of the committee on design.
An extension of principles encountered in Design Fundamentals I and II. Two-dimensional studies involving subjective and objective expressions of form, chromatics, perception theories and the nature of materials.

382. Visual Design II (5). Lab. 15. Pr., AT 381.
Historical background of printing types. Analysis and pencil studies of basic type faces. Type measurement and basic techniques of typographical layout. Preparation of art copy for letterpress and silk screen printing. Research and applied problems in trademark and poster media.

383. Visual Design III (5). Lab. 15. Pr., AT 382.
Italic types. Problems combining copy-fitting with basic illustration. Preparation of art copy for lithographic printing. Research in contemporary art movements. Graphic design problems emphasizing typographical design. Creative expression in lettering.

405. Printmaking II (5). Lab. 15. Pr., AT 305 and junior standing.
Drypoint, hard and soft ground etching, aquatint, metal engraving.

422. Painting V (5). Lab. 15. Pr., AT 324 and junior standing.
Painting with optional media and subject matter.

431. Contemporary Art (3). General Elective.
A survey of modern painting, sculpture and industrial design. Illustrated lectures, readings.

432-3. Seminar in Art Problems (5-5). Pr., senior standing.
Open to students who have shown ability, initiative and industry in carrying out individual projects. Research reports, and drawings under supervision on approved topics.

434. Seminar in Art History Problems (5). Pr., senior standing.
Open to students who have shown ability, initiative, and industry in carrying out individual projects. Research, reports, and drawings under supervision of approved historical topics.

442. Art in Education (5). Lec. 3, Lab. 6. Pr., junior standing.
Lectures, reading and research concerning principles and objectives of pertinent phases of Art for the purpose of understanding their significance in teaching at all levels. Laboratory experimentation in basic procedures of painting, graphic arts and sculpture as a means of relating the art experience to educational practice. Emphasis is placed upon creativity rather than technical skill.

456. Illustration II (5). Lab. 15. Pr., AT 355.
Sustained problems in illustration emphasizing both subjective and objective treatments.

462. Fashion II (5). Lab. 15. Pr., AT 361.
Problems in advanced rendering for fashion advertising; figured and textured fabrics, furs, and accessories.

463. Fashion III (5). Lab. 15. Pr., AT 462.
Design of clothing in all categories; historic adaptations; wardrobe color coordination; personality styling.

471. Industrial Design IV (5). Lab. 15. Pr., AT 373. Admission only upon recommendation of committee on design.
Design projects of larger functional dimesions in display, prefabricated building elements, transportation.

472. Industrial Design V (5). Lab. 15. Pr., AT 471.
Design or re-design problems of advanced complexity.

481. Visual Design IV (5). Lab. 15. Pr., AT 383.
Script lettering. Layout problems combining the use of photographs, type and illustration. Research in pertinent art movements. Newspaper layout. Three dimensional designs for point of purchase advertising.

482. Visual Design V (5). Lab. 15. Pr., AT 481.
Original letter design. Problems in catalog or booklet design. Editorial layout combined with illustration. Research in contemporary art movements. Three-dimensional designs for display.

496. Thesis (5). Lab. 15. Pr., AT 482.
A terminal Visual Arts design project initiated by the student and accompanied by a written analysis and evaluation. Both design problems and written matter will be defended orally by the student before a faculty group. The thesis will be retained by the Department of Art for one year.

497. Thesis (5). Lab. 15. Pr., AT 472.
A terminal Industrial Design project initiated by the student and accompanied by a written analysis and evaluation. Both design problems and written matter will be defended orally by the student before a faculty group. The thesis will be retained by the Department of Art for one year.

GRADUATE COURSES

605-6-7-8. Graduate Design (5-5-5-5). Lab. 15-15-15-15. Sykes and Staff
Advanced programs of creative design in the student's elected field.

641-2-3. Graduate Research in Art Problems I-II-III (5-5-5). Sykes and Staff
Research on approved topics in the student's special field. Conferences and reports.

699. Research and Thesis (Credit to be arranged). All quarters. Pr., AT 496 or equivalent. Applebee and Staff
A major art problem consisting of a sustained single project or a logical sequence of shorter projects. The candidate will be required to conceive and execute a work or works exhibiting pronounced creative ability and technical proficiency. Upon recommendation of the major professor, a written essay may be required to accompany the project. All drawings, paintings, and models connected with this work will be retained by the Department of Art.

Botany and Plant Pathology (BY)

Professors Lyle, Cairns, and D. Davis
Associate Professors Clark, Curl, N. Davis, Drake, and Marshall
Assistant Professors Funderburk and Goslin
Instructor Landers

The science of Botany deals not only with the well-known seed plants, such as the pine trees and the cotton plant, but also with such less-known plants as the ferns, the mosses, the liverworts, the lichens, the disease-causing fungi, and the seaweeds, plant forms that the average person knows little or nothing about, yet which are of tremendous everyday importance. The fundamental place of plants in the economy of daily life, as the basic source of the world's food and energy, warrants a careful and detailed study of their forms, their structures, their process, their means of growth and reproduction, and many other phases of their existence. Only by such studies may we discover the maximum resources of plants.

The required courses in Botany are designed to give the student knowledge of the fundamental nature of plants as a phase of general culture, and as a basis for further studies in the plant sciences.

The elective courses offered are intended to meet the needs of three different groups of students, namely: 1) those who intend to engage in farming or in farm demonstration work; 2) those who plan to teach in secondary schools; 3) those who desire a thorough technical training in Botany as preparation for plant disease inspection, investigational work in experiment stations or the United States Department of Agriculture, or who desire to obtain college training positions.

Graduate curricula leading to the M.S. and Ph.D. degrees are offered especially for students who want to prepare for college teaching or research work.

101. General Botany (5). Lec. Dem. 5. All quarters. Staff
An introduction to botany dealing with the development, structure, and function of plants. Precedes all advanced courses in botany.

102. General Botany (5). Lec. Dem. 5. All quarters. Pr., BY 101 Staff
The principal natural groups of plants embracing their particular structure, habits, reproduction, and relationships.

205. Pharmaceutical Botany (5). Lec. Dem. 5. Fall, Spring. Staff
Study of the various groups of plants, the macroscopic and microscopic characteristics of the various plant organs. Emphasis placed on drug yielding plants. Restricted to students in Pharmacy.

306. Fundamentals of Plant Physiology (5). Lec. 3, Lab. 4. Pr., BY 101, CH 103-104. Goslin
General aspects of fundamental life processes of plants involving physiological, structural, and environmental relationships.

308. Plants and Man (3). Lec. 3. Summer. General elective. Staff
A brief introduction to the botanical characteristics of most categories of plants including their kinship, origin, past and present distribution, and various ways utilized, as timbers, fruits and other foods, fibers, forage, ornamentals, drugs, etc. Local field trips will be made. (Restricted to students who have had no more than 5 hours credit in botany.)

309. General Plant Pathology (5). Lec. 3, Lab. 4. Winter, Spring. Pr., BY 101-2. Marshall
A fundamental course dealing with the nature, cause, and control of plant diseases illustrated by studies of the more common diseases of cultivated crops.

310. Forest Pathology (5). Lec. 3, Lab. 4. Winter, Spring. Pr., BY 101-2. Marshall
A study of diseases of trees in forests, parks, streets, and nurseries, as well as the more important fungi causing rots of timber and its products.

401. Experimental Statistics for Biological Sciences (5). Winter. Lec. 4, Lab. 2. Pr., MH 111 or MH 107 and junior standing. Drake
Basic concepts of statistical models and use of samples; variation, statistical measures, distribution, tests of significance, analysis of variance and elementary experimental design,

factorials, regression, correlation, and chi-square. Intended primarily for advanced undergraduates and as a beginning course for graduate students in biological sciences.

406. Systematic Botany (5). Lec. 5, Lab. 2. Spring. Pr., BY 101-2 and junior standing. D. Davis
The identification and classification of flowering plants. Field trips will be made.

410. Aquatic Plants (5). Lec. 2, Lab. 6. Summer. Pr., BY 101-2 and junior standing.
Identification and study of those plants found in or associated with the fresh water features of Alabama. Emphasis will be on plants which have particular economic value in wildlife management or fish culture. Field trips will be taken and a plant collection required.

412. Principles and Methods in Plant Pathology (5). Lec. 3, Lab. 4. Winter. Pr., BY 309 or 310 and junior standing. Lyle
Emphasis will be placed on the principles governing the development of plant diseases and their control. The laboratory will consist of a study of the techniques used in isolation, culture, and inoculation of plant pathogens.

413. General Plant Ecology (5). Lec. 3, Lab. 4. Fall. Pr., BY 306 and junior standing. D. Davis
A study of natural vegetation, environment, and interrelationships between the two with primary emphasis on the Southeastern United States. Field trips will be made.

415. Developmental Plant Anatomy (5). Lec. 3, Lab. 4. Winter. Pr., BY 101, CH 104, and junior standing. Goslin
A study of the comparative anatomy of vascular plants, with emphasis on developmental relationships, evolution, and structure. Economically important species will be studied as examples.

416. Plant Microtechnique (5). Lec. 2, Lab. 6. Winter. Pr., BY 101, 306 or 415 and junior standing. Cairns
Principles and methods of fixing, imbedding, sectioning, staining, and mounting the various plant organs and organisms for permanent or semipermanent microscope slide preparations.

419. Principles in Plant Disease Control (3). Lec. Dem. 4. All quarters. Pr., BY 309 and graduate standing. Staff
Designed to acquaint the student with such principles of plant disease control as protection, exclusion, eradication, and resistance. The control of important plant pathogens will be considered by each method. Emphasis will be placed on chemical control with antibiotics, fumigants, and fungicides.

420. Weed Identification and Control (5). Lec. 3, Lab. 4. Spring. Pr., BY 101 and junior standing. D. Davis
Recognition of the more noxious weeds, their ecology, habit of growth, dissemination and the evaluation of the various methods of control.

421. Weeds (3). Lec. 3, Lab. 4. Summer and Fall. Pr., BY 101 and graduate standing. Staff
The identification and control of Alabama weeds. (Credit for both BY 420 and BY 421 may not be used to meet requirements for the Master's degree.)

430. Nematode Diseases of Plants (3). Lec. 3. Winter. Pr., BY 101-2, ZY 101 and junior standing. Cairns
Designed to acquaint students in agricultural sciences with the role of nematodes as plant parasites; study of representative plant diseases caused by nematodes; principles and practices of control.

435. Plant Biology I (5). Lec. Dem. 5. Summer. Pr., Teaching experience and junior standing. Marshall
Designed to provide the secondary school teacher with the basic principles of plant science and emphasizing applications of plants to human affairs. Restricted to students in Education except by special permission.

436. Plant Biology II (5). Lec. Dem. 5. Summer. Pr., BY 435 and junior standing. Staff
Designed to provide the secondary school teacher with practical experience in laboratory and field identification of common plants and their habitats, emphasizing the collection, preservation and preparation of specimens for classroom use. Restricted to students in Education except by special permission.

GRADUATES ONLY, MAJOR OR MINOR

601. Design and Analysis of Experiments (5). Lec. 4, Lab. 2. Spring, odd years. Pr., BY 401 or equivalent. Drake
Analysis and interpretation of data from the more advanced experimental designs; covariance, multiple treatment comparisons, individual degrees of freedom, factorials, incomplete block designs, confounding, fractional replications, size of experiment, efficiency, combining experiments, and methods for increasing precision.

602. Least Squares Analysis of Experiments (5). Spring, even years. Lec. 4, Lab. 2. Pr., BY 401 or equivalent. Drake
Analysis and interpretations of experimental data by least squares procedures; multiple regression, simple and multiple co-variance, discrete and continuous variables, design and analysis of experiments with equal and unequal subclass numbers, missing data, factorials, individual degrees of freedom, matrices.

605. Advanced Plant Physiology I (5). Lec. 3, Lab. 4. Fall. Pr., BY 306. Staff
Water relations and mineral nutrition; internal and external factors affecting the absorption, translocation, utilization, and loss of water and mineral elements by green plants.

606. Advanced Plant Physiology II (5). Lec. 3, Lab. 4. Winter, even years. Pr., BY 306. Funderburk
Plant growth. A review of literature and laboratory methodology of plant physiological subject matter in the areas of plant growth regulators, mode of action of growth regulators, and factors affecting plant growth.

607. Advanced Plant Physiology III (5). Lec. 3, Lab. 4. Spring. Pr., BY 306, 5 hrs. of organic or biochemistry and consent of instructor. N. Davis
Metabolism; the energy relations of cells.

608. Advanced Systematic Botany (5). Lec. 2, Lab. 6. Spring. Pr., BY 406. D. Davis
Intensive study of special groups of plants.

609. Mycology (5). Lec. 2, Lab. 6. Fall. Pr., BY 101-2 and consent of instructor. Curl
A systematic survey of the fungi with aspects of morphology included. Emphasis will be on the economically important fungi.

610. Algae (5). Lec. 2, Lab. 6. Winter, even years. Pr., BY 410 or consent of instructor. Staff
A general course dealing with the identification, growth, reproduction, distribution, evolution, and economic importance of the algae.

611. Ecology of Soil Fungi (5). Lec. 2, Lab. 6. Fall. Pr., BY 309 or 310, AY 304. Curl
Quantitative and qualitative consideration of the microbial population of the soil. Relation of physical environment, antagonsitic microorganisms, and higher plants on growth and survival of soil fungi. Emphasis will be on methodology for studying soil microflora and plant disease relationships.

612. Physiology of the Fungi (5). Lec. 3, Lab. 4. Winter, odd years. Pr., BY 306, 412, 609, or consent of instructor. N. Davis
A study of the chemical activities of fungi as related to their nutrition, growth, reproduction, and fermentive abilities.

613. Experimental Plant Ecology (5). Lec. 2, Lab. 6. Pr., BY 413. Summer. D. Davis
A field course covering the methods of obtaining quantitative data on the structure and composition of plant communities as well as the use of instruments for evaluating the environment.

615. Morphology of Crop Plants (5). Lec. 3, Lab. 4. Summer. Pr., BY 306, BY 415 or 416. Staff
The basic principles of reproduction in angiosperms with particular emphasis on their relationships to crop production, plant breeding, and genetics.

616. Cytology and Cytogenetics (5). Lec. 3, Lab. 4. Winter. Pr., BY 416 or ZY 308, ZY 300. Staff
A course dealing with cellular morphology and living processes, with chromosomal structure, function and behavior, and with the relationship of these factors to evolution.

618. Diseases of Special Crops (5). Lec. and Lab. 6. Summer or Fall. Pr., BY 201, BY 309, or 310, BY 412, and BY 430. Staff
The identification, epidemiology, etiology, and control of the major diseases on various kinds of economic plants, to be selected on the basis of current needs of the students. Subject matter to be presented by various specialists within the department.

620. Chemical Weed Control (5). Lec. 3, Lab. 4. Fall or Summer, odd years. Pr., BY 306, BY 406 or 420. D. Davis
Application, mode of action, physiological relationships, recent advances, and special weed problems.

625. Special Problems. Credit to be arranged. Staff
A. Cytology; B. Ecology; C. Morphology; D. Mycology; E. Nematology; F. Pathology; G. Physiology; H. Taxonomy; I. Chemical Weed Control.

630. Advanced Phytonematology (5). Lec. 3, Lab. 4. Fall. Pr., BY 430. Cairns
Detailed studies of the nematodes parasitic on plants; special emphasis will be given to host-parasite relationships and recent advances in phytonematology.

635. Biological Processes (5). Lec.-Dem. 5. Summer. Pr. BY 435 and teaching experience. Marshall
Designed to acquaint the secondary school teacher with some of the fundamental life-processes, and to illustrate ways in which each of these affects the affairs of man, such as cosmic significance of photosynthesis, algae as a potential source of food, antibiotics, micro-organisms in industry.

640. Departmental Forum (1). Fall, Winter and Spring. Required of all majors, open to all minors. Lyle
Discussions concerning current topics in the various sciences and related fields.

641. Seminar in Plant Physiology (1). Fall, Winter, and Spring. May be taken more than once for credit. Staff

650. Nuclear Science in Agriculture (5). Lec. 3, Lab. 6. Spring. Pr., Graduate standing with research experience. D. Davis
A study of the role of nuclear science in agricultural research with training in the use of radioisotopes and familiarization with the possibilities, limitations, and necessary safety precautions.

699. Research and Thesis. Credit to be arranged. May be taken more than one quarter. Staff

799. Doctoral Research and Dissertation. Credit to be arranged. Staff

Building Technology (BT)

Head Professor Orr
Professor Marty
Assistant Professors Darden, Dean, and Rainer

104. Introduction to Building (5). Lab. 15.
Survey of the Building Industry; building procedures; study of plans and details; use of drawing tools; elements of estimating. Lectures, readings, drawings.

105. Drawing and Projections (5). Lab. 15.
Application of geometry to orthographic, isometric, cavalier, cabinet, and perspective projections. Exercises in working drawings.

106. Materials and Construction (5). Pr., BT 104.
Structural and finish materials and assembly systems used in buildings. Lectures, reports, readings, drawings.

220. Mechanics of Structures (5). Pr., PS 205, MH 202.
Principles of mechanics as applied to building construction, graphic statics; resolution of external forces; analysis of trusses; centroids; moments of inertia; friction. Lectures, demonstrations, problems.

311-2-3. Structures I-II-III (3-3-3). Pr., BT 220.
Study of statically determinate structures including beams, columns, trusses, struts and tension members. Shear and bending moments, torsion, slope and deflection. Problems are worked in wood, reinforced concrete, steel and other structural materials. Lectures, research and problems.

367-8-9. History of Building I-II-III (3-3-3). Pr., BT 106.
An analysis of the development and use of construction methods and materials showing the effects of this development on building form from ancient to contemporary times. Illustrated lectures, readings, reports and drawings.

411-2-3. Structures IV-V-VI (3-3-3). Pr., BT 313.
Continuation of Structures I-II-III in the field of statically indeterminate structures. Consideration of lateral stability in buildings. Design of foundations. Lectures, research and problems.

421. Construction Problems I (5). Lab. 15.
Solution of practical problems of the type normally encountered in the erection of buildings. Layouts, design of formwork and scaffolding. Material storage and handling. Job organization. Demonstrations, research and drawings.

422. Construction Problems II (5). Lab. 15. Pr., BT 312 and 421.
Continuation of BT 421; solution of problems taken from working drawings, specifications, shop drawings and contract documents. Discussions, research, estimates, computations, drawings.

433. Construction Methods and Estimating (5). Pr., BT 160 and 312.
Material quantities; estimating; builder's organization and procedure; job records; builder's liability; labor relations; safety precautions. Preparation of quantity lists from working drawings; lectures, problems.

452-3. Building Equipment I-II (3-3). Lec. 2, Lab. 3. Each quarter. Pr., PS 206.
Description and analysis of heating, air conditioning, water supply, plumbing, electrical wiring, motors, elevators, and illumination as related to buildings. Lectures, demonstrations, readings, problems.

490. Building Construction Thesis (5). Lab. 15, or (7). Lab 21. Pr., BT 422, 433 and 4th year standing, third quarter. Admission only upon recommendation of the Faculty Thesis Committee.
The preparation of a detailed cost estimate and construction program of a building selected by the student with the approval of the department staff. Required: a report setting forth a description of the building and its site, a list of quantities of materials, a list of unit prices for materials and labor, detailed cost sheets; forms for presentation of bids, contract with owner, contract with subcontractors; a construction schedule; and an outline of construction methods required. The candidate will defend the thesis orally before the staff and guest specialists.

521-2-3. Advanced Structures I-II-III (5-5-5). I, Fall; II, Winter; III, Spring. Pr., BT 413.
Theory and practical design of complex and long span structures, both in steel and reinforced concrete. Multiple story buildings, towers, arches, vaults, domes, thin shell systems, foundations. Lectures, research and problems.

541. Building Equipment III (2). Lab. 6. Pr., BT 453 and AR 403.
A continuation of Building Equipment I and II in selected laboratory problems.

GRADUATE COURSES

605-6-7. Graduate Research in Building (5-5-5). All quarters. Staff
Independent investigation and reports on topics selected by the student with approval of the instructor.

621-2-3. Graduate Construction Design (5-5-5). Lab. 15-15-15. All quarters. Pr., BT 523. Staff
The analysis and solution of complex problems in construction design, with particular emphasis upon practical and economical application to a selected building. Conferences, working drawings, scale models.

699. Research and Thesis. Credit to be arranged. May be taken more than one quarter. Staff
The analysis and solution of an advanced problem in building. The choice, scope and program of study for the problem must be submitted by the candidate for approval of the department staff during the first week of the quarter.

Chemical Engineering (CN)

Professors Basore, Hsu, and Wingard
Associate Professors Moore, Findley, Hirth, and Vives*

201. Chemical Engineering Fundamentals (3). Lec. 2, Lab. 3. Pr., MH 262, PS 201.
Introducton to chemical engineering and process calculations. Emphasis placed upon programming and the solution of problems by the digital computer.

300. Process Calculations (3). Pr., CN 201.
This course is a continuation of CN 201. It includes problems relating to the thermophysics, thermochemistry, and more comprehensive problems in fuels, combustion, and chemical metallurgical and petroleum processes.

321. Chemical Process Industries (3). Pr., CH 408.
Study of inorganic chemical manufacturing processes. Includes flow sheets, process variables, automatic instruments, application of physical chemistry, economics and costs.

322. Organic Process Industries and Kinetics (3). CH 304, CH 408.
Introduction to kinetics, thermodynamics, and applications to representative organic chemical industries. Consideration also given to synthesis, costs, optimum operating conditions, and choosing between alternates.

324. Fluid Mechanics (4). Pr., MH 264, PS 203.
A study of fluid mechanics, including flow through porous media and fluidized beds.

326. Heat Transfer (5). Lec. 3, Lab. 6. Pr., PS 203. Coreq., CN 324.
A study of the principles of heat transfer, including radiation, conduction, and convection. Representative laboratory problems in fluids, heat transfer, and evaporation.

423. Unit Operations (5). Lec. 3, Lab. 6. Pr., CN 326.
Diffusion, psychometry, drying and filtration, size reduction, and materials handling. Laboratory experiments relate to the above.

* Part-time Engineering Experiment Station.

424. Mass Transfer (5). Lec. 3, Lab. 6. Pr., CN 326.
Distillation, absorption, and extraction. Laboratory experiments relate to the above.

425. Kinetics (4). Pr., CN 322.
A study of the rates of homogeneous, hetrogeneous, and catalytic reactions, and applications of the rates to the organic process industries.

426. Engineering Metallurgy (5). Lec. 4, Lab. 3. Pr., CH 408 and junior standing.
Physical metallurgy with special reference to the effect of mechanical work and heat treatment on the properties of ferrous metals and alloys, and non-ferrous metals and alloys. Titanium, Zirconium, Thorium, Tantalum, and Berylium also are studied.

430. Computer Principles (2). Pr., MH 361, CN 423.
Study of the basic principles of analog and digital computer theory, and applications to the chemical engineering.

432. Instrumentation (4). Lec. 2, Lab. 6. Pr., MH 361, PS 203.
Automatic feedback control, servomechanisms, instrumentation of typical equipment, laboratory work includes performance characteristics of typical instruments and remote-control.

437. Process Engineering (4). Lec. 2, Lab. 6. Pr., junior standing and CN 322, CN 423. Coreq., CN 424.
Semi-independent work of individuals and small groups. The subject matter relates to the study of the scientific literature, laboratory operations designed to develop a satisfactory process, and pilot plant development and operation; including cost analyses, a market study, and the writing of reports. Principles of report writing are stressed.

440. Nuclear Engineering (5). Pr., senior standing in engineering, B average except by special permission.
Includes units and nomenclature, the nuclear chain reactor, radiation, shielding, nuclear properties of materials, instrumentation and control, remote handling, heat transfer with liquid metals, and radioactive waste disposal.

484. Chemical Engineering Plant Design (4). Lec. 2, Lab. 6. Pr., CN 437 and junior standing.
The major responsibility is placed upon individuals or small groups for the optimum design, choosing between alternates, selection of equipment, and the calculation of the required sizes, plant layout, cost analyses and the writing of reports. Comprehensive problems are assigned which usually include heat, materials and economic balances, unit operations and processes, kinetics, and thermodynamics. Some consideration also is given to statistics.

490. Applied Thermodynamics (5). Pr., CH 412.
Thermodynamic properties of fluids, the expansion and compression of fluids, the thermodynamics of solution, physical equilibrium and chemical equilibrium, and important applications to chemical engineering.

COURSES PRIMARILY FOR GRADUATE STUDENTS

601. Fluid Flow and Heat Transfer (5). Fall. Pr., CN 423.

602. Diffusional Processes I (5). Winter. Pr., CN 424.
Evaporation, drying and distillation. Special emphasis on distillation.

603. Diffusional Processes II (5). Spring. Pr., CN 424.
Special emphasis on absorption and extraction.

604. Advanced Chemical Engineering Thermodynamics (5). Pr., CN 490.
Advanced problems in the application of thermodynamics to industrial processes. Special emphasis on physical equilibrium.

605. Kinetics (5). Pr., graduate standing.
Study of the rates of homogeneous, heterogeneous, and catalytic reactions and applications of the rates to the process industries.

609. Petroleum Refining Engineering (5). Pr., graduate standing.
Theoretical and practical aspects, including solvent extraction, catalytic cracking and synthesis of organic compounds from petroleum.

610. Advanced Physical Metallurgy (5). Lec. 4, Lab. 3. Pr., CN 426.
Heat treatment of ferrous and non-ferrous metals including microscopic studies. Recent developments also are included. This course is open by special permission to seniors who have credit for CN 426.

611. Advanced Kinetics and Principles of Reactor Design (5). Pr., CN 605.

612. Process Dynamics and Control (5). Pr., CN 432 or equivalent. Coreq., MH 361.
Dynamics of chemical engineering processes and operations, such as reactors, heat exchangers, flow-storage systems, and diffusional operations. This course deals primarily with the mathematical study of automated systems and some of the aspects of computer control.

699. Research and Thesis. Credit to be arranged.

Chemistry (CH)

Professors Capps, Kosolapoff, Land, Nichols, Price, Saunders, Schrader, and Stevens
Associate Professors Baker, Barksdale, Bunger, Melius, Peterson, Ward and Ziegler
Assistant Professor Dinius

Credit in CH 103-4-5 toward a degree is subject to completion of the corresponding laboratory course, i.e., 103L, 104L, and 105L.

103-4. General Chemistry (4-4). Each quarter. Coreq., CH 103, MH 160, MH 111 or MH 107. (CH 103 Pr., for CH 104.)
A comprehensive course for non-chemistry majors embracing a detailed study of the fundamental principles and concepts of chemistry.

103L-104L. General Chemistry Laboratory (1-1). Lab. 3.
These courses must be taken concurrently with the corresponding lecture course.

105. General Chemistry (3). A continuation of CH 104.
A course for non-chemistry majors devoted to a study of the chemistry of the elements according to the analytical groups. Special emphasis will be placed on the principles of ionic equilibria, solubility product, and related phenomena and their use for the separation and identification of the group constituents.

105L. General Chemistry Laboratory (2). Lab. 6.
Laboratory work will cover qualitative analysis.

111. General Chemistry (5). Lec. 4, Lab. 3. Coreq., MH 160, MH 111 or MH 107.
A course designed for chemistry majors and others in closely related areas.

112. General Chemistry (5). Lec. 4, Lab. 3. Pr., CH 111 or CH 103.
A continuation of CH 111.

113. General Chemistry (5). Lec. 3, Lab. 6. Pr., CH 104 or CH 112.
A continuation of CH 112. Laboratory work covers Qualitative Analysis.

203. Organic Chemistry (5). Pr., CH 104.
An abbreviated course in fundamentals of organic chemistry. Designed for students in Home Economics, and others.

204. Analytical Chemistry (5). Lec. 3, Lab. 6. Pr., CH 113.
A study of the fundamental concepts used in analytical chemistry and observed in the laboratory via volumetric techniques.

205. Analytical Chemistry (5). Lec. 3, Lab. 6. Pr., CH 204.
Fundamental concepts used in analytical chemistry and observed in the laboratory via gravimetric analysis and separation techniques.

206. Quantitative Analysis (5). Lec. 3, Lab. 8. Each quarter. Pr., CH 105 and 105L.
This course embraces work in both gravimetric and volumetric analysis, including the analysis of some of the more important ores and minerals.

207. Organic Chemistry (5). Lec. 4, Lab. 3. Each quarter. Pr., CH 104.
The aliphatic hydrocarbons and their derivatives. This course, together with CH 208, is designed to meet the needs of students in Laboratory Technology, Pre-Medicine, Pre-Dentistry, Pharmacy and other students who are not majoring in chemistry.

208. Organic Chemistry (5). Lec. 3, Lab. 6. Each quarter. Pr., CH 207.
A continuation of CH 207. The aromatic hydrocarbons and their derivatives are considered in some detail.

301. Biochemistry (5). Lec. 4, Lab. 3. Pr., CH 208.
A brief course especially designed for students in Pre-medicine and Pharmacy.

303-4. Organic Chemistry (5-5). Lec. 3, Lab. 6. Prs., CH 113 for CH 303 and CH 303 for CH 304.
A basic course in organic chemistry covering nomenclature, group reactions, important theories and concepts relating to aliphatic and aromatic compounds, designed primarily for chemistry majors.

305. Organic Chemistry (5). Lec. 3, Lab. 6. Pr., CH 304.
A continuation and extension of CH 303-304, including heterocyclic compounds and many classes of compounds of interest in the field of biochemistry.

316. Physical Chemistry (5). Pr., MH 112, CH 105 and PS 205.
A one-quarter course for pre-medicine students.

342. Geology (3). General elective. Pr., CH 104 or sophomore standing.

401. Chemistry for High School Science Teachers (5). Lec. 4, Lab. 3. Summer. Pr., Teaching experience.

404. Organic Analysis (Qualitative) (5). Lec. 3, Lab. 6. Pr., CH 305 or equivalent and junior standing.
After performing identification tests on known compounds, the student identifies pure organic unknowns, and separates and identifies the components of mixtures.
Students taking this course for gradnate credit will identify more unknowns than required of undergraduates.

407. Physical Chemistry (5). Lec. 4, Lab. 3. Pr., MH 264, CH 205 or CH 206, PS 201, and junior standing.
The course embraces a discussion of the more important theories and laws of physical chemistry.

408. Physical Chemistry (5). Lec. 4, Lab. 3. Pr., CH 407, and junior standing.
A continuation of CH 407.

409. Physical Chemistry (5). Lec. 4, Lab. 3. Pr., CH 408, and junior standing.
An extension of principles studied in CH 407-8 with special reference to electro-chemistry.

410. Intermediate Inorganic Chemistry I (5). Lec. 5. Pr., junior standing.
A study of atomic structures, valance bonding and periodic properties of the elements.

411. Intermediate Inorganic Chemistry (5). Lec. 3, Lab. 6. Pr., CH 410 and junior standing.
Deals with the synthesis and purification of typical inorganic compounds.

412. Chemical Thermodynamics (5). Pr., CH 408, and junior standing.
A study of the basic laws governing changes in energy in gases, liquids and solids.

413. Analytical Chemistry (5). Lec. 3, Lab. 6. Pr., CH 409.
Fundamental concepts used in instrumental analytical chemistry and as observed in the laboratory via spectrophotometric, electroanalytical and chromatographic techniques.

418-19-20. Biochemistry (5-5-5). Lec. 4, Lab. 3. Pr., CH 206, CH 208, and junior standing.
A standard year-course in the principles of biochemistry.

GRADUATE COURSES

601. Selected Topics in Chemistry (5). Lec. 4, Lab. 3. Summer. Pr., CH 401 or its equivalent.
A study of modern topics in general chemistry and a short review of organic chemistry.

610. Advanced Inorganic Chemistry (5). Pr., CH 410 or equivalent. Spring Quarter.
Selected groups of inorganic compounds considered from a modern physiochemical viewpoint emphasizing their chemical and physical properties, rates of conversion one into another, molecular structure and valence relationships. Considers primarily compounds of the non-metallic elements.

611. Advanced Inorganic Chemistry (5). Pr., CH 410 or equivalent. Winter Quarter.
The same type of treatment as given in CH 610, but considering mainly compounds of metallic elements.

612. Inorganic Preparations (5). Pr., CH 610 or CH 611. Summer quarter, even years.
The preparation of typical inorganic compounds illustrating special and more advanced techniques.

614. The Chemistry of Coordination Compounds (5). Pr., CH 410 or equivalent. Winter quarter, even years.
A study of complex inorganic compounds with emphasis on early and modern developments, isomerism, chelation, methods of determining formation constants and reaction mechanisms.

616. Inorganic Non-Aqueous Solvent Chemistry (5). Pr., CH 410 or equivalent. Spring quarter, odd years.
A study of the physical and chemical characteristics of selected inorganic non-aqueous solvent systems and typical reactions which may be effected in these media.

620-21. Organic Chemistry (5-5). Pr., CH 305 or equivalent. CH 620 in Fall quarter and CH 621 in Winter quarter.

622. Quantitative Organic Analysis (5). Lec. 2, Lab. 6. Pr., CH 621 or equivalent. Spring quarter, even years.
General methods for the quantitative determination of elements and functional groups in organic compounds.

623. Heterocyclic Compounds (5). Pr., CH 621 or equivalent. Summer quarter, even years.
A study of organic compounds containing heterocyclic ring systems.

624. Element-Organic Compounds (5). Pr., CH 621 or equivalent. Fall quarter, odd years.
The organic chemistry of Groups III, IV and V elements.

625. **Organic Nitrogen Compounds (5). Pr., CH 621 or equivalent. Fall quarter, even years.**
A study of organic compounds containing nitrogen.

626. **Polymers (5). Pr., CH 621 or equivalent. Spring quarter, odd years.**
A study of polymeric substances and some of their practical applications.

627. **Special Topics in Organic Chemistry (5). Pr., CH 621 or equivalent. Summer quarter, odd years.**
A selection of modern topics in organic chemistry.

630-31. **Advanced Physical Chemistry (5-5). Pr., CH 409 and CH 630 pr. for CH 631. Fall quarter for CH 630 and Winter quarter for CH 631.**
Composed of a series of topics of general and current interest and may vary from year to year. Topics generally considered include kinetic theory of matter, modern theories of the structure of matter, generalized thermodynamics, relation of molecular structure to spectroscopic and thermodynamic properties, and kinetics of chemical reactions.

632. **Relation between Structure and Properties of Chemical Substances (5). Pr., CH 631. Fall quarter, even years.**
Considers the established relationships that exist between structures of organic and inorganic compounds and physical properties which are relatively easy to determine. The principal aim is the demonstration of the fundamental relation of structure of compounds and electronic configurations, consistent with the foundation of modern concepts of the nature of valence.

633. **Chemical Kinetics (5). Pr., CH 631, Fall quarter, odd years.**
Deals with both theoretical and experimental aspects of reaction rates. The mathematics and characterization of chemically reacting systems include discussions of the collision theory, the transition state theory, unimolecular reactions, reactions in condensed phases, behavior of nonstationary-state systems, and photochemistry.

634. **Heterogeneous Equilibria (5). Pr., CH 631. Spring quarter, even years.**
A study of chemical and physical equilibria in heterogeneous systems.

635. **Surface Chemistry and Colloids (5). Pr., CH 409. Spring quarter, odd years.**
A consideration of the properties of surfaces and interfaces and principles relating to disperse systems.

636. **Statistical Thermodynamics (5). Pr., CH 631. Winter quarter, even years.**
Statistical approach to thermodynamics and chemical equilibrium.

637. **Introduction to Quantum Chemistry (5). Pr., CH 631. Winter quarter, odd years.**
Quantum theory as applied to chemical problems.

640. **Carbohydrates (5). Pr., CH 418 or its equivalent. Winter quarter, even years.**
The chemistry of the mono- and polysaccharides.

641. **Amino Acids and Proteins (5). Pr., CH 418 or its equivalent. Fall quarter, odd years.**
The chemistry of the amino acids and proteins.

642. **Lipids (5). Pr., CH 418 or its equivalent. Summer quarter, even years.**
The chemistry of the lipids and their biological significance.

643. **Enzymes (5). Pr., CH 419 or its equivalent. Fall quarter, even years.**
Physical and chemical properties and mechanism of action of enzymes and their role in metabolic reaction.

644. **Intermediate Metabolism (5). Pr., CH 419 or its equivalent. Winter quarter, odd years.**
A detailed study of the metabolism of the carbohydrates, lipids, and amino acids.

645. **Biochemical Research Techniques (5). Lec. 2, Lab. 6. Pr., CH 420 or its equivalent. Summer quarter, odd years.**
A laboratory course designed to acquaint the graduate student in chemistry, biochemistry and the biological sciences with the modern techniques used in biochemistry.

650. **Analytical Chemistry (5). Lec. 2, Lab. 8. Pr., CH 409. Fall quarter.**
The analytical application of physical-chemical measurements concerned primarily with electrical properties.

651. **Analytical Chemistry (5). Lec. 4, Lab. 3. Pr., CH 409. Spring quarter.**
The analytical application of chemical spectroscopy. Applying techniques of ultra-violet, visable infra-red, etc., and absorption analysis.

652. **Theories and Current Topics of Analytical Chemistry (5). Pr., CH 651. Winter quarter, odd years.**

653. **Physio-chemical Separations (5). Lec. 4, Lab. 3, Pr., CH 409. Spring quarter, even years.**

654. Radiochemical Analysis (5). Lec. 3, Lab. 6. Pr., CH 205. Summer quarter, odd years.
The application of radioactive tracers and related techniques to chemical analysis.

670. Journal Club (No Credit).
Required of all graduate students in chemistry.

699. Research and Thesis. Credit to be arranged. May be taken more than one quarter.

799. Doctoral Research and Dissertation. Credit to be arranged.

Civil Engineering (CE)

Professors Priest, Hudson and Watwood
Associate Professors Blakney, Branson, Popovics, Shih and Thacker
Assistant Professors Metz and Peterson

201. Surveying I (5). Lec. 3, Lab. 6. Pr., MH 112 and EG 102 or equivalent.
Measurement of distances, elevations, and angles; adjustment of instruments; computation of positions, areas, and volumes; contours; grades; mapping, land surveying.

203. Surveying II (5). Lec. 3, Lab. 6. Pr., CE 201.
Route surveying, astronomic observations; photogrammetry.

210. Engineering Surveying (3). Lec. 2, Lab. 3. Pr., MH 112.
Use of chain transit and level; precision and accuracy of measurements; theory of errors. For non-Civil Engineering students.

302. Highway Engineering I (5). Pr., CE 201.
Development of highways; geometric design; drainage; earthwork operations; construction materials; concrete and bituminous surfaces.

304. Theory of Structures I (5). Pr., ME 306.
Stress analysis of statically determinate structures; influence lines; combined stresses.

305. Sanitary Engineering I (5). Lec. 4, Lab. 3. Pr., CE 308.
Theory and design of water collection and distribution facilities and waste-water collection systems. Laboratory includes fundamental tests relating to both water supply and waste-water treatment. Emphasis placed on theory and significance of the tests.

308. Hydraulics (5). ME 307.
Statics; fundamental equations of motion; ideal fluids; impulse momentum; real fluids; similitude and dimensional analysis; flow in pipes; flow in open channels; measurements; and flow around immersed objects.

314. Analysis of Aerial Photographs (3). Lec. 2, Lab. 3. Pr., CH 342.
A study of soil and rock patterns, characteristics and drainage.

400. Higher Surveying (5). Lec. 4, Lab. 3. Pr., CE 203, junior standing.
Photogrammetry; map projections; geodesy; special instruments.

401. Theory of Structures II (5). Pr., CE 304, junior standing.
Moving loads; deflections; stress analysis of statically indeterminate structures including double integration, slope deflection and moment distribution.

402. Indeterminate Structures (5). Pr., CE 401 or ME 403, senior standing.
Continuation of CE 401; elastic energy; area moments; three-moment equation; secondary stresses.

403. Highway Materials Laboratory (2). Lab. 6. Pr., CE 302 and ME 309.
Routine tests of non-bituminous and bituminous materials; fundamentals of design of bituminous and concrete mixes.

404. Reinforced Concrete (5). Lec. 4, Lab. 3. Pr., CE 401, senior standing.
Beams and slabs; compression members; forms; building codes.

405. Sanitary Engineering II (5). Lec. 4, Lab. 3. Pr., CE 305, junior standing.
Theory, design, construction, and operation of water treatment and waste-water disposal facilities considered on a unit operations basis.

406. Hydraulic Laboratory (1). Lab. 3. Pr., CE 308 or ME 313.
Venturi Meters; analysis of experimental data; orifices and stort tubes; Pitot tubes; normal loss of energy in pipes; special loss of energy in pipes; uniform flow in open channels; control meters; impulse turbines; drag.

407. Municipal Engineering I (5). Pr., senior standing.
Duties and responsibilities of city engineer and municipal consultant; problems connected with promoting, financing, designing, and constructing municipal improvements.

408. Engineering Foundations (5). Pr., CE 404 or BT 413, senior standing.
Geology as related to design of foundations for engineering structures; design of foundations; use of concrete, steel, wood piling, caissons, cofferdams, grillages, and spread footings, reports on current articles in technical publications.

409. Public Health Engineering (5). Pr., senior standing.
Weather and climate, heating, ventilation, lighting; atmospheric pollution; noise; water and waste disposal, rural sanitation and public health aspects of nuclear energy.

410. Highway Engineering II (5). Lec. 4, Lab. 3. Pr., CE 302, junior standing.
Highway planning, financing, and administration; economics of highway improvement; transportation surveys; maintenance; traffic surveys; procedure of awarding contracts and supervision of construction.

411. Flow in Open Channels (5). Lec. 5. Pr., CE 308 or ME 313, junior standing.
Uniform flow, rapidly varied flow, gradually varied flow, subcritical transitions, surges, supercritical transitions, bends, precipitous slopes, energy dissipation, spillways, and oscillatory waves.

412. Hydrology (5). Lec. 5. Pr., CE 308 or ME 313, junior standing.
Precipitation, runoff, flood routing, flood control, river regulation, and coastal engineering problems.

413. Hydraulic Structures (5). Lec. 5. Pr., CE 308 or ME 313, senior standing.
Dams, spillway, outlet works, gate structures, locks, structures for river regulation, canals, structures for shore protection, port facilities.

414. Structural Design I (5). Lec. 4, Lab. 3. Pr., CE 304, junior standing.
Steel and timber design; flexural members; columns; trusses; connections; structural frameworks.

415. Construction Planning (5). Lec. 4, Lab. 3. Pr., junior standing.
Construction methods; estimates of materials and costs; critical path scheduling; and reports.

416. Prestressed Concrete Design (5). Pr., CE 404, senior standing.
Pretensioning and post-tensioning systems; design of statically determinate and indeterminate prestressed members, flexure, shear, cracking, ultimate capacity, anchorage stresses, raised and stopped cables.

417. Structural Design II (5). Lec. 4, Lab. 3. Pr., consent of the instructor and senior standing.
Arches; continuous structures including bridges, buildings, and special frames.

418. Soil Mechanics (5). Lec. 4, Lab. 3. Pr., ME 306, junior standing.
Engineering properties of soils; soil surveys and sampling; stability; laboratory analysis and tests.

419. Municipal Engineering II (5). Pr., senior standing.
Engineering problems of municipal transportation, communications, water supply, sewerage, streets, schools, shopping, parking, and recreation facilities.

420. Sanitary Engineering Laboratory (5). Lec. 4, Lab. 3. Corequisite, CE 405, junior standing.
Laboratory studies of the physical, chemical, and bacteriological aspects of Sanitary Engineering; laboratory testing procedures and experiments relating to the treatment of waters and wastes; interpretation of routine plant control analyses and indices of pollution.

GRADUATE COURSES

600. Bituminous and Concrete Mix Design (5). Lec. 3, Lab. 6. Pr., CE 403.
Review of methods of design of bituminous and concrete mixes, with practice in job and laboratory control tests of aggregates and mixes.

601. Subgrade Stabilization (5). Lec. 3, Lab. 6. Pr., CE 418.
Studies of factors involved in stabilization with practice in laboratory and job control tests.

602. Advanced Soil Mechanics (5). Lec. 3, Lab. 6. Pr., CE 418.
Earth pressure theories; stability computations; seepage computations; consolidation; footing, raft, pile and pier foundation; shearing strengths.

610. Similitude (5). Lec. 4, Lab. 3. Pr., CE 308 or ME 313.
Principles of dimensional analysis and similitude, use of models, distorted models, and analogies.

612. Hydrodynamics (5). Lec. 5. Pr., CE 308 or ME 313 and MH 361.
Equations of motion for nonviscous liquids, force potentials, velocity potentials, conformal mapping, circulation, vortices, equations of motion for viscous liquids, boundary layers, drag, turbulence, and wave motion.

613. Flow of Fluids in Pipes (5). Pr., CE 308 or ME 313.
Viscous and turbulent flow of liquids, effects of compressibility, pressure waves, secondary flows, control devices, measuring devices.

620. Advanced Sanitary Engineering (5). Pr., consent of instructor.
An advanced study of the principles utilized in water and sewage treatment processes and public health engineering practice.

621. Advanced Sanitary Engineering Design (5). Lec. 3, Lab. 6. Pr., consent of instructor.
Problems in the layout and design of water, sewage, or industrial waste systems and treatment plants.

622. Advanced Sanitary Engineering Practice (5). Lec. 3, Lab. 6. Pr., consent of instructor.
Advanced laboratory problems and field exercises in the application of sanitary examination of water, milk, food, wastes, and air; stream pollution and industrial waste surveys; protection of water supplies from nuclear and biological warfare agents.

623. Industrial Waste Treatment (5). Pr., consent of instructor.
Industrial waste problems, including characteristics of individual industries, effects on streams, and methods of treatment; also the disposal of nuclear wastes.

630. Advanced Stress Analysis (5). Lec. 4, Lab. 3. Pr., consent of instructor.
Buckling of structures, analysis of elastic and plastic stability, torsion, secondary stresses, arches, theory of limit design.

631. Special Topics in Structural Design (5). Lec. 4, Lab. 3. Pr., CE 630.
Design problems related to continuous frames and trusses; economical proportions, analysis and design of connections.

632. Experimental Stress Analysis (5). Lec. 3, Lab. 6. Pr., consent of instructor.
Basic theory and laboratory techniques for experimental stress analysis; measurement of strain by mechanical and electrical gages, brittle lacquer, and photogrid; two dimensional photoelasticity; membrane analogies; treatment of errors. A term paper is required, except for undergraduate students who may be permitted to enroll in this course.

633. Elasticity (5). Pr., consent of instructor.
Plane stress and plane strain; differential equations of equilibrium; equations of compatibility, two-dimensional problems in rectangular and polar coordinates; strain-energy methods; analysis of stress and strain in three dimensions, torsion of circular and non-circular cross-section; bending of prismatical bars; stress evaluation from strain measurements.

634. Advanced Reinforced Concrete (5). Lec. 5. Pr., CE 404.
Effect of shrinkage, plastic flow and deflection on concrete design. Plastic and ultimate strength theories of design. Fundamentals of prestressed concrete.

690. Seminar. Credit to be arranged. May be taken more than one quarter.

699. Thesis. Credit to be arranged. May be taken more than one quarter.

Dairy Science (DH)

Professors Autrey and Cannon
Associate Professor Rollins

The department offers training in the theory and practice of dairy husbandry and dairy manufacturing. Courses are designed to meet the practical and scientific needs of farm and factory practices. Requirements for doing graduate work are described in the graduate catolog.

It is expected that each student taking a major in this department shall have four months of practical dairy farm or dairy plant experience before graduation.

200. Fundamentals of Dairying (5). Lec. 4, Lab. 3. All quarters. Pr., CH 103. Not open to students who have had DH 201 or DH 301. Staff
General survey of dairying. Feeding, care and management of dairy cattle. Dairy farm equipment and records. Composition and properties of milk. Handling, testing and processing of milk.

305. Practical Dairy Tests (5). Lec. 3, Lab. 4. Fall. Pr., DH 200 or DH 201. Cannon
Routine laboratory practices in testing dairy products and the application of such tests in controlling the composition of dairy products; adapted to dairy inspection work.

308. Dairy Bacteriology (5). Lec. 3, Lab. 4. Winter. Pr., DH 200 or DH 201, VM 200, 311, or 330. Cannon
Bacteriology of dairy products; types of organisms encountered and their practical significance; routine bacteriological tests and their application.

310. Technical Control of Dairy Products (5). Lec. 3, Lab. 4. Spring. Pr., DH 305 and 308. Cannon
Application of bacteriological and chemical tests to plant operation. Special tests and their application.

311-12-13. Judging Dairy Products (1-1-1). Lab. 3. Winter, Spring, Fall. Cannon
Flavor analysis of dairy products. Score cards used in evaluation of flavor characteristics and other factors.

314-15-16. Judging Dairy Cattle (1-1-1). Lab. 3. Winter, Spring, Fall. Rollins
Studies and practical work in comparative judging of dairy cattle; study of breed score cards; fitting for exhibition.

317. Dairy Cattle Feeding and Management (5). Lec. 4, Lab. 3. Fall. Pr., DH 200 or DH 301, AH 204. Rollins
Evaluation of various feeds for growth and milk production; nutritional requirements of dairy animals; application of the principles of nutrition to dairy cattle feeding; calculating rations. Some time devoted to dairy cattle breeding plans, procedures of herd record keeping, management problems.

402. Artificial Insemination (3). Lec. 1, Lab. 6. Winter. Pr., DH 200 and junior or senior standing. Rollins
The Artificial Insemination Association; anatomy and physiology of bovine reproduction; practice in collecting, processing and using semen in breeding cows; and study of factors affecting breeding efficiency.

403. Dairy Farm Practices (5). Lec. 3, Lab. 6. Spring. Pr., DH 317 and junior standing. Rollins
Practical study of feed production, storage, and feeding problems: analysis of herd records and pedigrees; study of herd management procedures. In this course emphasis is on situations and records existing on dairy farms.

406. Dairy Cattle Feeding and Management (3). Pr., AH 204 and DH 200 or DH 317, and graduate standing. Rollins
Bases of modern feeding practices; emphasis on reasons for feeding high quality roughage and high energy feeds. Limited study of dairy herd management problems and practices; milk production, testing and recording; appraisal of artificial breeding as a tool in cattle improvement.

408-9-10. Dairy Plant Processing (5-5-5). Fall, Winter. Lec. 4, Lab. 3. (Spring. Lec. 2, Lab. 9.) Pr., senior standing. Cannon
Detailed study of fundamental processing operations. Application of these operations in market milk production and in the manufacture of cheese, ice cream, butter and condensed dairy products.

411. Food Plant Sanitation (3). Lec. 2, Lab. 2. Winter. Pr., junior standing. Cannon
Sanitary regulations of food plants. Principles and procedures of cleaning and sanitizing food handling equipment.

GRADUATE COURSES

601. Milk Secretion (5). Pr., DH 317. Autrey
Anatomy and physiology of milk secretion; milk precursors; factors affecting composition of milk.

602. Advanced Technical Control of Dairy Products (5). Fall. Pr., DH 305. Cannon
Advanced methods of analyses of dairy products and the relation between composition and processing methods.

604. Advanced Market Milk (5). Pr., DH 304. Autrey and Cannon
Scientific investigations of current problems and their application to the commercial processing and handling of market milk. Special assigned problems.

605. Advanced Ice Cream Making (5). Pr., DH 401. Cannon
Scientific investigations of current problems and their application to the commercial manufacture and handling of ice cream. Special assigned problems.

607. Advanced Dairy Cattle Breeding (5). Pr., DH 402 and DH 403. Autrey, Rollins
The anatomy and physiology of reproduction in dairy cattle; artificial insemination problems.

608. Special Problems in Dairy Cattle Nutrition (5). Pr., DH 403. Staff
Critical review of literature on certain dairy cattle nutrition subjects; planning and executing one or more experimental nutrition problems.

609. Experimental Methods in Dairy Research (5). Pr., BY 401. Staff
Study of technics in designing dairy research projects and in analyzing results.

611. Seminar (1). May be taken for more than one quarter. Staff

699. Research and Thesis. Credit to be arranged. Staff

Dramatic Arts (DR)

Head Professor Peet
Associate Professor Knowles

101. Dramatic Production (5). Lec. 2, Lab. 9.
An apprenticeship in the fundamentals of producing plays from the practical point of view. A general grounding in the field.

102. Acting and Stage Techniques (5). Lec. 2, Lab. 9.
An introduction to acting and methods of production.

199. Dramatics (1).
Any student interested in working with the Department of Dramatic Arts' producing organization, the Auburn Players, is eligible. A minimum of thirty hours' work is required. (May be taken for credit for a maximum of six quarter hours.)

201. Directing (5). Lec. 3, Lab. 6.
An elementary study of the process of directing non-professionals.

202. Acting and Make-Up (5). Lec. 3, Lab. 6.
The technique and psychology of acting, and elementary stage make-up.

203. Stage Mechanics (5). Lec. 3, Lab. 6.
A study of scene design, materials, construction, and stage lighting.

204. Dramatic Theory (5).
A study of the dramatic theories of the past and present which have influenced the present day theatre.

310-11-12. World Theatre (5-5-5). Pr., DR 201-2-3-4 or permission of instructor.
An advanced course dealing with the plays, actors, stages, and audiences, and with the aesthetic and social backgrounds of the theatre from the beginning through the Nineteenth Century.

313. Drama Appreciation I (3). General elective. Not open to Dramatic Arts Majors.
A survey of the theatre and stagecraft from early times to the present day, emphasizing the social and artistic position of the stage in each civilization.

314. Drama Appreciation II (3). General elective.
A survey of contemporary plays and productions, aimed to make theatre-going intelligent fun.

350. Sound for the Theatre (3). General elective. Pr., junior standing or approval of instructor.
The selection, recording, editing and controlling of sound effects as they are needed in the theatre. A non-technical study of the recording process, along with the operation, care and maintenance of tape recording equipment.

401-2-3. Advanced Directing (5-5-5). Lec. 1, Lab. 12. Pr., junior standing, permission of instructor.
Productions will be prepared and produced by the student.

407-8-9. Advanced Stagecraft (5-5-5). Lec. 1, Lab. 12. Pr., junior standing, permission of instructor.
Productions will be designed, built, lighted and operated by the student.

413. Twentieth Century Theatre (5). Pr., junior standing, permission of instructor.
A study of the present-day theatre.

425-26. Dramatics in the School (5-5). Pr., senior or graduate standing. (Either part can be taken separately.) To be offered in the Summer quarter only.
For the teacher who is called upon to select, plan, coach, and produce plays, classroom and assembly programs. The course gives a background of what-to-do and how-to-do-it.

Economics (EC), Secretarial Administration (SA) and Sociology (SY)

Head Professor Anson
Professors Hartwig, Klontz, Richardson, Ritland, Sanders
Research Professor Steele
Associate Professors Bonin, Boston, Gritz, Hanna, Hartman, Hill, Kincey, Myles, Patton, and Stalnaker
Assistant Professors Bagwell, Bliss, J. S. Cook, Erwin, Franklin, Frisby, D. P. Hale, F. O. Hale, Lamar, Shields, Waldo, and Williams
Instructors Balch, Brown, Clark, C. W. Cook, Dorman, Evans, French*, Guy, Howell, Johnson, Massey, Prestridge*, and Warren*
Graduate Assistants Benton, Blanton, Bushey, Creek, Dinius, Evans, Fisher, Gordon, Miyoshi, Mize, Washington, and Woodley

Economics (EC)

The program in Economics and Business Administration is designed to prepare students for careers in business and industry. It also offers training for careers which require basic study in Economics supplemented with a broad cultural program. Courses are arranged below to indicate the different fields of concentration available to departmental majors and to students in other departments and schools. Students in the Science and Literature curriculum majoring in Economics must include EC 201-2; 345, and 360. Business Administration majors follow the curriculum outlined on page 140.

* Temporary.

Accounting

211-12. Introductory Accounting (5-5). Lec. 3, Lab. 4. Pr., sophomore standing. Gritz, Staff
A study of bookkeeping procedure and elementary accounting principles. EC 211 is prerequisite to EC 212.

213-14. Engineering Accounting and Cost Control (5-5). Lec. 3, Lab. 4. Pr., sophomore standing. EC 213 is prerequisite to EC 214. Hill, Staff
This course is particularly designed for students of engineering. During the first course basic accounting principles and procedures are stressed from an engineering approach. During the second course emphasis is made on cost finding and cost accounting control of industrial concerns.

311-12. Intermediate Accounting (5-5). Lec. 3, Lab. 4. Pr., EC 212 or 214. Hartman, Staff
A study of the advanced principles of accounting involving partnerships, corporations, systems, and analysis of financial statements.

314. Income Tax Accounting (5). Pr., EC 212 or 214. Gritz, Staff
Interpretation of the regulations, preparation of returns, and the keeping of accounting records for tax purposes will be considered in this course.

411-12. Cost Accounting (5). Lec. 2, Lab. 6. Pr., junior standing and EC 214 or 312. Hill, Staff
A study of accounting principles involved in job-lot, process and standard cost systems.

414. Advanced Income Tax Accounting (5). Pr., junior standing and EC 312 and EC 314. Staff
A study of special tax accounting problems of individuals, partnerships, corporations, estates, and trusts. Extensive use will be made of a tax service program.

416. Auditing (5). Pr., junior standing and EC 312. Gritz, Staff
This course is a study of the principles of auditing with particular attention to methods of testing, analyzing, and summarizing accounting records.

417-18. Advanced Accounting (5-5). Lec. 2, Lab. 6. Pr., junior standing and EC 312. Staff
Advanced accounting theories and procedures, consolidation of financial statements, and other special problems will be studied in this course.

419. Governmental Accounting (5). Summer and Winter Quarters. Pr., junior standing and EC 312. Hartman
A study of budgeting and accounting procedures of governmental divisions.

Economic Theory and History

200. General Economics (5). Pr., sophomore standing. Ritland, Staff
A survey course in principles and problems of economics dealing with analyses of production costs, determination of prices, and national income composition and distribution. This course not open to majors in Economics and Business Administration. Primarily a service course for students majoring outside the Commerce and Economics fields. Credit may not be earned in both EC 200 and EC 201.

201-2. Principles and Problems of Economics (5-5). Pr., sophomore standing. (EC 201 is prerequisite to EC 202.) Hanna, Staff
An introduction to the principles of economics and analysis of contemporary economic problems and trends. Required of all Economics and Business Administration majors. Credit may not be earned in both EC 200 and EC 201.

206. Socio-Economic Foundations of Contemporary America (3). General elective. Franklin, Staff
An appraisal and survey of the social and economic developments which lead to and help toward an understanding of present day American society. Economic and social institutional development is studied against the background of the Industrial Revolution.

357. Economic History of Europe (5). Pr., junior standing. Richardson
A survey course dealing with the economic contributions of the medieval period; mercantilism; laissez-faire; and the developments in agriculture, industry, transportation, trade, and banking to World War II.

358. Economic History of the United States (5). Pr., junior standing. Richardson
The course comprises a study of the development of the economic institutions, growth of industries, regional specialization, and relation of government to business enterprise from the Colonial period to the present.

451. Intermediate Economic Theory (5). Pr., EC 202, junior standing. Steele
The theory of pricing under varying market conditions and distribution of income among the factors of production.

452. Comparative Economic Systems (5). Pr., EC 202, junior standing. Ritland
An analysis of the rival economic doctrines of Capitalism, Socialism, and Communism.

460. Economic Development of the South (5). Pr., junior standing and EC 358 or consent of the instructor. Richardson
In this course the historical approach is used in a study of industries, transportation, banking, etc., in the South. Economic changes are traced and an attempt made to ascertain the fundamental causes that brought them about. Emphasis is given to Alabama's place in the economic picture.

471. Foreign Trade (5). EC 202, junior standing. Staff
This course treats the economic background of foreign trade, various products in foreign trade, balance of trade, financing foreign trade, etc.

Finance

360. Money and Banking (5). Pr., EC 202 or AS 202, junior standing. Hanna, Stalnaker
The principles of money, credit and banking including consideration of monetary systems, foreign exchange and commercial banking with relation to the Federal Reserve System.

446. Business Cycles (5). Pr., EC 202, and junior standing. Bonin
An analysis of the causation of economic cycles, their measurement and proposed means of control.

462. Monetary Theory and Policy (5). Pr., junior standing and EC 360. Hanna
An advanced study of monetary and banking policy. Attention given to government fiscal policies and programs.

463. Corporation Finance (5). Pr., EC 202, junior standing. Patton
This course covers a practical survey of the financial organization and policies of modern business enterprise with special emphasis on the corporation.

464. Investments (5). Pr., EC 463, junior standing. Patton
This is a study of individual investment policies, investment institutions, and types of investments available.

465. Public Finance (5). Pr., EC 202, junior standing. Bonin
A study of the facts and principles of government revenues and disbursements including attention to state and local financial problems.

General Business

321. Property Insurance (5). EC 200 or 201 and junior standing. Stalnaker
The principles, uses and types of insurance with particular emphasis on fire, marine, automobile and casualty lines.

322. Life Insurance (5). Pr., EC 200 or 201, junior standing. Hartman, Stalnaker
A study of the organization of the life insurance business and of the various types of contracts.

323. Real Estate (5). Pr., EC 200 or 201, junior standing. Stalnaker
The fundamental principles and practices as applied to the purchase, sale, lease, mortgage, title and management of real estate.

340. Personal Finance (3). General elective. Pr., junior standing. Staff
An informative study of plans for managing personal financial problems involving insurance, housing, household budgeting, investments, personal and bank loans, credit and time buying, etc.

341. Business Law (5). Pr., EC 200 or EC 201, or AS 202. Cook
This course covers a study of contracts, torts, courts and partnerships from the standpoint of the average citizen. EC 343 excludes credit for this course.

342. Business Law (5). Pr., EC 341. Cook
Here the legal principles covering sales, agency, insurance, personal property, real property, suretyship and bankruptcy are presented from the standpoint of the layman.

343. The Law and Contracts (3). Pr., EC 200 or 201, and junior standing. EC 341 excludes credit for this course. Cook
An introduction to the historical background of law and legal institutions and a study of the law of contracts as it applies in Commerce and Industry.

402. American Industries (5). Pr., EC 200 or 201, and junior standing. Klontz
An intensive study of selected industries, emphasizing economic factors affecting growth, organization and operation.

472. Economics of Transportation (5). Pr., EC 200 or 201, junior standing. Staff
This course traces the development of systems of transportation. Rates are studied as they affect agriculture, commerce and industry. Attention is also given to government regulation of transportation agencies.

476. Motor Transportation (5). Pr., EC 200 or 201, junior standing. Staff
A study of the economics of the motor transportation business with emphasis on freight and passenger carriers and the highway system. Particularly designed for students of business and of civil engineering.

Geography

102. Principles of Geography (5). Not open to juniors or seniors. Bagwell, Dorman
Basic course in geography. Man and his works in relation to the Earth as a planet, location, climate, land forms, water bodies, minerals, soils, biota.

103. Economic Geography (5). Not open to juniors or seniors. Richardson, Dorman
An elementary, systematic study of distribution and environmental relations of man's principal economic works. Designed primarily for business administration students.

301. Geo-Political Basis of World Powers (3). General elective. Pr., junior standing. Richardson
Deals with the interaction between the natural-physical environment and the international activities of world powers. Emphasis is placed upon the changing geographic and economic patterns in world affairs.

303. Geography of the Soviet Union (3) General elective. Pr., junior standing.
The physical and human geography of the U.S.S.R. and its role in international affairs.

304. Geography of South America (5). Pr., junior standing. Bagwell
A regional survey of economic and social developments, resources and products.

305. Geography of North America (5). Pr., junior standing. Bagwell
Human-use regions, resources, social and economic developments will be studied.

306. Geography of Europe (5). Pr., junior standing. Bagwell
An analysis of the influences of climate, surface features, and natural resources on the distribution of peoples, their industries and routes of trade. Consideration will be given to each country within its regional setting and to the relationship of Europe to the remainder of the world.

307. Geography of Asia (5). Pr., junior standing. Bagwell
A survey of climate, topography, and natural resources and their influence upon the distribution of peoples, their industries and commerce.

308. Geography of Africa (5). Pr., junior standing. Dorman
A study of the principal regions of Africa with particular emphasis on the areas and countries of greater economic and international importance.

405. Cultural Geography of the World (5). Pr., senior or graduate standing. Richardson
A study of the influence of physiographic factors in the social, economic and political development of peoples and states.

407. World Resources and Their Utilization (5). Pr., junior standing. Dorman
The world's principal natural resources are studied primarily from the geographic point of view (location, transportation, topography, water supply, power sources, climate, etc.). Covers the principles of resource appraisal, the changing nature of resource utilization, and resource conservation.

Management

205. Business Organization & Management (5). Pr., EC 103 and sophomore standing. Erwin, Staff
A brief description of the structure and major functions of business followed by evaluation of the basic managerial techniques as applied in the operation of business enterprises.

404. Office Mangagement (5). Pr., EC 205 or ST 302, or consent of instructor, junior standing. Frisby, Brown
Office organization, equipment, layout, planning, personnel supervision, direction of office activities, executive control.

433. Retail Store Management (5). Pr., EC 331, junior standing. Warren
A study of the principles and practices involved in the scientific operation of the retail store. Store location, layout, buying, pricing, and merchandise control are considered among other topics.

437. Sales Management (5). Pr., EC 205, EC 331, junior standing. Erwin
A study of the principles and practices of sound organization and administration of a sales organization. Includes consideration of: sales department organization, selecting, training, compensating, and supervising salesmen, sales planning, setting up sales territories and quotas and other problems.

449. Advanced Personnel Management (5). Pr., EC 442 or PG 461. Myles, Steele
This course deals with the solution of selected subjects of problems which confront personnel managers and related supervisory personnel. Specialized problems and subjects such as: maintenance of communications, wages and incentives, morale, merit rating, development and training of leaders, counseling, grievance control and recognition of human factors in industry will be considered.

473. Traffic Management (5). Pr., junior standing and EC 472, or permission of instructor. Staff
A course designed to acquaint students with the fundamentals of traffic control work touching upon the various transportation services.

480. Business Policies and Administration (5). Pr., EC 202, EC 205, or consent of instructor, junior standing. Erwin
A study of the formulation and application of policies and programs pertaining to personnel, production, finance, procurement and sales in the business enterprise.

Marketing

331. Principles of Marketing (5). Pr., EC 200 or 201. Warren, Erwin
A general but critical survey of the field of marketing covering marketing channels, functions, methods and institutions.

332. Credits and Collections (5). Pr., EC 200 or 201, junior standing. Frisby
This course is a study of the nature and functions of credit, credit investments, credit information, mercantile and installment credit, credit department, organization and management, collection methods, credit insurance, etc.

333. Salesmanship (5). Pr., junior standing. Erwin
A study of the principles and problems in personal selling covering the various steps involved in the selling process. Consideration is also given to the economics of selling and to material useful to salesmen but outside the field of selling techniques.

432. Advertising (5). Pr., EC 331, junior standing. Warren
A study of the principles and practices involved in advertising. Material covered includes the analysis of the need for advertising, preliminary product and market analyses needed for efficient advertising, planning campaigns, media selection, copy, layout and advertising production.

434. Purchasing (5). Pr., EC 331, junior standing. Frisby
This course deals with the objectives, the control and the direction of industrial purchasing.

435. Marketing Problems (5). Pr., EC 331, junior standing. Erwin
This course deals with marketing problems, policies, costs, channels of distribution, terminal markets, trade barriers and legislation.

436. Business Research Methods (5). Pr., EC 331, junior standing. Erwin
A study of the methods of scientific research in the field of marketing and their application to the solution of marketing problems. Deals with the planning of an investigation, gathering data, tabulation and analysis, editing, interpretation of data, presentation of reports, determination of market potentials and of various types of quotas.

438. Retail Merchandising (5). Pr., junior standing and EC 433. Warren
Deals with the planning, policies, procedures, and techniques necessary to insure a balanced assortment of merchandise consistent with customer demand and profitable operation. Profit computation, pricing, inventory evaluation, stock planning and stock control are among topics covered.

Personnel Management and Industrial Relations

350. Labor Problems (5). Pr., EC 200 or 201, junior standing. Anson, Kincey
This is a survey of the problems of the industrial workers from the standpoint of the worker, the employer, and society.

442. Personnel Management (5). Pr., EC 205 or IM 306, junior standing. Massey, Myles, Prestridge
A course dealing with the management of labor, touching upon selection, training, placement, turnover, payment policies, employee representation, etc.

444. Labor Legislation (5). Pr., EC 350, junior standing. Kincey
Analysis of background, content, and significance of industrial relations, wage and hour, and selected social security laws.

445. Industrial Relations (5). Pr., EC 200 or 201, junior standing. Anson, Kincey, Steele
An analysis of legislation, collective bargaining, union-management corporation and economic conditions bearing upon employer-employee relations.

450. Job Evaluation and Incentive Systems (5). Pr., EC 442, senior standing. Myles
A study of wage and salary policy and administration with special emphasis upon the functioning of job analysis, job evaluation, and methods of providing incentives in industry and business.

Statistics

345. Statistics (5). Lec. 4, Lab. 2. Pr., EC 200 or 201, junior standing. Klontz, Boston
A study of the methods of collecting, presenting, and analyzing statistical data; tabular and graphic presentations, frequency distribution, time series and statistical inference.

474. Advanced Statistics (5). Pr., junior standing and EC 345 or MH 127 and consent of instructor. Klontz
More advanced methods of statistical analysis including curve fitting; curvilinear, multiple and partial correlation; analysis of variance.

GRADUATE COURSES (EC)

600. The National Income and Capital Accumulation (5). Pr., EC 202 and graduate standing or consent of instructor. Hanna
The course considers the computation of the national income, the uses of income data, interest rates, saving and investment, the monetary and credit system.

601. Value and Distribution (5). Pr., EC 202 and graduate standing or consent of instructor. Staff
This course is an attempt to set forth the positive content and limitations of the modern theories of value, wages, rents, and profits.

606. Management Problems (5). Pr., EC 480 or permission of instructor. Erwin
An examination of basic administrative problems in business and industry; attention given to managerial controls as applied to administrative and operative functions.

607. Managerial Economics (5). Pr., EC 202. Staff
The course presents an analysis of decision theory and of criteria for decision making concerning output, pricing, capital budgeting, scale of operations, investment and inventory control. Attention is also given to concepts of profits, production and cost functions, competition and equilibrium for the firm and the industry. A brief introduction to linear programming is included.

608. Business Research (5). Pr., EC 202. Steele
The theory and practice of research through the mail survey, the personal interview, study of documents and observation. The analysis and presentation of research findings will be stressed.

610. Managerial Accounting (5). Pr., EC 212. Hill
A course, primarily non-technical, designed for the student who will be confronted with business problems requiring a comprehensive understanding of accounting concepts, and the accepted methods of applying these concepts in decision-making, planning, and control.

611. Advanced Accounting Theory (5). Pr., EC 312 and graduate standing or consent or instructor. Gritz
A review of the origin and development of double-entry accounting; followed by a critical study of the theory of modern accounting principles and procedures.

614. Accounting Systems (5). Gritz

616. Advanced Auditing (5). Pr., EC 416 and graduate standing or consent of instructor. Hill
This course will cover the application of auditing principles and procedures to practical problems encountered in the field of public and private accounting.

617. Advanced Accounting Problems (5). Pr., EC 417 and graduate standing or consent of instructor. Hill
This course is an extension to and a consolidation of all the other advanced accounting courses. Attention will be given to preparation for special accounting examination.

621. Personnel and Labor Policy (5). Anson, Kincey, Steele
Seminar analysis and discussion of selected personnel or labor problems, programs and cases.

650. Economic Seminar (5). Pr., graduate standing or consent of instructor. Staff
A course designed for those students engaged in intensive study and analysis of economic problems.

674. Advanced Statistical Analysis (5). Pr., EC 474. Klontz
Further study of analysis of variance; analysis of covariance; introduction to econometrics.

699. Research and Thesis. Credit to be arranged. May be taken more than one quarter. Staff

Secretarial Administration (SA)

For listing of courses, see page 262.

Sociology (SY)

For listing of courses, see page 263.

Education (ED)

Dean Truman M. Pierce

Administration, Supervision, and Guidance, Acting Head Professor Pierce
Professor White
Associate Professors Russell, Saunders, Sharp, and Tincher
Assistant Professors Nunnery, Phillips, and Stalcup

Agricultural Education, Head Professor Montgomery
Professor Deloney
Associate Professors Bottoms and Pruett

Elementary Education, Head Professor Coss
Professors Callaway and Dalton
Associate Professor Ellisor
Assistant Professor Newell
Instructor Brooksher°

Health, Physical Education, and Recreation, Head Professor Fourier
Professors Land, Lapp, and Umbach
Associate Professors Evans, Fitzpatrick, and Young
Assistant Professors Dragoin, Lawler, Martincic, Rosen, Turner, and Walton
Instructors Carlisle, Jackson, Lurie, Lynn, Price°, Rawls, Reid°, Taube, Tomlin, Waldrop, and Washington

Psychology, Head Professor Spears
Professor McIntyre
Associate Professor Mayer
Assistant Professors Johnson, Kelley, and Moon°
Instructor Sanders°

Secondary Education, Acting Head Professor Atkins
Professors Davis, Herndon, Hollaway, Punke, and Scheid
Assistant Professors Carter, Dorné, Ensminger°, Justice, Millican, Rosen, and Weaver
Instructors Justice°, Kerns°, Nixon°, Ottis°, and Young

Elementary Education

Head Professor Coss
Professors Callaway and Dalton
Associate Professor Ellisor
Assistant Professors Edwards and Newell
Instructor Brooksher°

102-3-4. Orientation: Personal and Professional (1-1-1). All quarters. Staff
Description given under Courses for Supporting Programs in Areas of Specialization.

200. Foundations (4). Lec. 3, Lab. 2. All quarters. Pr., PG 213-214. Staff
Description given under Courses for Supporting Programs in Areas of Specialization.

300. Principles and Practices in Education (4). Lec. 3, Lab. 2. All quarters. Pr., ED 200 or equivalent, junior standing. Staff
Description given under Courses for Supporting Programs in Areas of Specialization.

329. Creative and Recreational Expression (6). Lec. 5, Lab. 3. Pr., ED 300 or consent of department chairman. Dalton, Pickett
An intensive study of the teaching of creative and recreational expression, involving basic knowledge and understanding, laboratory demonstrations, and experimental approaches useful in this development, including such areas as music, art, rhythms, and other play activities, creative dramatics, creative writing and use of learning materials.

370. Teaching Basic Skills (6). Lec. 5, Lab. 3. Pr., ED 300 or consent of department chairman. Dalton, Newell
An intensive study of the teaching of language, number, and related skills, emphasizing knowledge and understandings, use of appropriate instructional materials, laboratory demonstrations, and experimental approaches basic to the development of these skills.

371. Fundamentals of Reading (4). Pr., junior standing. Callaway
An intensive study of the teaching of reading with appropriate attention to books and materials.

° Temporary.

396. Music for the Elementary Teacher (3). Pr., MU 371 or consent of department chairman. Justice
An elective course for Elementary Education majors who need additional instruction in music.

421. Developing Understandings of the Natural and Social Environment (6). Lec. 5, Lab. 3. Pr., ED 300 or consent of department chairman. Darnell, Ellisor, Newell
The development of social understandings and relationships through study of the natural and social environment. Attention is given to such areas as social science, natural and physical science, health and safety through use of appropriate children's books and other instructional materials, laboratory demonstrations and experimental approaches.

480. Student Teaching in Elementary School (10-15). Pr., senior standing. Staff
Actual teaching experiences in an off-campus situation except for experienced teachers enrolled in the summer workshop.

490. Evaluation in Education (3). Lec. 2, Lab. 2. All quarters. Pr., student teaching or consent of departmental chairman. Staff
Description given under Courses for Supporting Programs in Areas of Specialization.

Advanced Undergraduate and Graduate

471. Remedial Procedures in Reading (5). Pr., junior standing. Callaway
This course aims to produce skilled workers in the remedial aspects of reading. Emphasis will be placed on the diagnosis of reading disabilities and appropriate individual and group techniques for correcting deficiencies discovered.

472. Books and Related Materials for Children (4). Pr., junior standing. Darnell
Description given under Courses in Library Service.

496. Music in the Elementary School (5). Pr., junior standing. Justice
To give the individual teacher a deeper insight into skills, techniques, and knowledge of music. Appropriate materials, adapted to social and musical interests of children, are studied and evaluated.

Secondary Education (SED)

Acting Head Professor Atkins
Professors Davis, Herndon, Hollaway, Punke, and Scheid
Assistant Professors Carter, Dorné, Ensminger, Justice, Millican, Rosen, and Weaver*
Instructors Justice, Kerns*, Nixon*, Ottis*, and Young*

Undergraduate

For description of the following courses see under Courses for Supporting Programs in Areas of Specialization.

102-3-4. Orientation: Personal and Professional (1-1-1). All quarters. Staff

200. Foundations (4). Lec. 3, Lab. 2. All quarters. Pr., PG 213-214. Staff

300. Principles and Practices in Education (4). Lec. 3, Lab. 2. All quarters. Pr., ED 200 or equivalent, junior standing. Staff

429. Problems of Health Education and Health Observation of School Children (5). Pr., junior standing. Evans, Lapp

453. Science and Modern Living (5). Pr., sophomore standing. Atkins

473. General Science for Teachers (5). Lec. 4, Lab. 2. Pr., junior standing. Atkins, Newell

490. Evaluation in Education (3). Lec. 2, Lab. 2. All quarters. Pr., student teaching or consent of departmental chairman. Staff
Description given under Courses for Supporting Programs in Areas of Specialization.

494. Organization of Instrumental Music (4). Pr., ED 414. Justice
Theory and practice in the organization and administration of instrumental music in public schools.

495. Organization of Choral Music (4). Pr., ED 414. Justice
Theory and practice in the organization and administration of choral music in public schools.

497. Organization of Elementary School Music (4). Pr., ED 423. Justice
Theory and development of the music program in the elementary school.

* Temporary.

Courses in Teaching in the Respective Areas of the Secondary School

These courses provide for examination, application, and scientific evaluation of methods, techniques, and procedures used in the different areas of the secondary school program. These will include such activities as resource unit preparation, observation and participation in actual classroom situations, and opportunities for actual participation in using different teaching techniques and procedures.

All students will take one course in Teaching in the major and either one course in Teaching or one course in Program in the minor.

During the summer quarter these courses will be open only to experienced teachers and special students attending either one or both terms and will be conducted on a seminar basis. The work will be directed and coordinated by one or more instructors in cooperation with contributions made by staff members from the different areas represented in the class.

405. Teaching in Secondary School (3). Lec. 2, Lab. 2. Pr., 9 hours of Psychology, ED 200, or equivalent; Pr. or coreq., ED 300 or equivalent.

(A) Business Education (Fall)	Herndon
(B) Foreign Languages (Fall)	Ottis
(C) Language Arts (Fall, Spring)	Scheid
(D) Mathematics (Fall)	Staff
(E) Science (Fall)	Atkins
(F) Social Science (Fall, Winter, Spring)	Punke, Weaver

407. Teaching Home Economics Education (5). Lec. 4, Lab. 2. Fall, Spring. Pr., 9 hours of Psychology, ED 200 or equivalent; Pr., or coreq., ED 300 or equivalent. Ensminger

Teaching and Program courses will be taught on a unified basis as experience and scheduling permit.

Courses on Program in the Respective Areas of the Secondary School

These courses provide for making an analysis of the function and purpose of appropriate subject matter in the secondary school curriculum including an examination of basic philosophical assumptions and principles which form the basis for the selection and organization of curriculum content in the respective fields.

All students will take one course in Program in the major and either one course in Program or one course in Teaching in the minor.

During the summer quarter these courses will be open only to experienced teachers and special students attending either one or both terms and will be conducted on a seminar basis. The work will be directed and coordinated by one or more instructors in cooperation with contributions made by staff members from the different teaching areas represented in the class.

410. Program in Secondary School (3). Lec. 2, Lab. 2. Pr., 9 hours of Psychology, ED 200 or equivalent; Pr., or coreq., ED 300 or equivalent.

(A) Business Education (Spring)	Herndon
(B) Foreign Language (to be arranged)	Ottis
(C) Language Arts (Winter, Spring)	Scheid
(D) Mathematics (Spring)	Staff
(E) Science (Spring)	Atkins
(F) Social Science (Fall, Winter, Spring)	Punke, Weaver

412. Program in Home Economics Education (4). Lec. 3, Lab. 2. Fall, Spring. Pr., 9 hours of Psychology, ED 200 or equivalent; Pr., or coreq., ED 300 or equivalent. Ensminger

Teaching and Program courses will be taught on a unified basis as experience and scheduling permit.

Student Teaching in the Secondary School

These courses provide the student an opportunity to live in a community and receive first-hand experiences in teaching. The experiences include personal and professional contacts with the different aspects of community life and making application of concepts, skills, and knowledge of classroom situations.

The courses are organized on the lecture-laboratory basis. Students spend approximately one to two weeks in a lecture situation on the campus before reporting to their student teaching assignment. Eight to nine weeks are spent living in a community and working in the school. Upon completion of the off-campus experience, stu-

dents return to the campus for one to two weeks for lectures, discussions, and evaluation. The student should have completed a large part of the work in both the major and minor areas of specialization prior to taking Student Teaching.

During the summer quarter these courses will be open only to experienced teachers and special students enrolled for the quarter and will be conducted on a seminar basis. The work will be directed and coordinated by one or more instructors in cooperation with contributions made by staff members from the different teaching areas represented in the class. Observation and practice experiences will be provided in keeping with individual and group needs.

413. Student Teaching in Secondary School (10 or 15). Fall, Winter, Spring. Pr., 9 hours of Psychology, ED 200 or equivalent; ED 300 or equivalent, two courses on Teaching and Program in the Secondary School, and junior or senior standing.

(A) Business Education	Herndon
(B) Foreign Languages	Scheid
(C) Home Economics Education	Ensminger
(D) Language Arts	Scheid
(E) Mathematics	Staff
(F) Science	Atkins
(G) Social Science	Weaver

Advanced Undergraduate and Graduate

409. Advanced Hygiene (5). Pr., junior standing. Staff
Principles and concepts basic to the improvement of individual and group living and the role of the home, school, and community in the development of sound physical and mental health.

Graduate

619. Scientific Principles Applied to Physical Education and Athletics (5). Pr., Undergraduate major or minor in health and physical education. Fourier, Lapp
Specific application of physics, physiology, and psychology to the development of physical skills and related topics including reaction time, motivation, maturation, illusions, morale, and problems of group social living in physical education and athletics.

626. Physical Fitness, a Critical Analysis (5). Pr., VM 220-221 or departmental approval. Fourier, Lapp
A critical analysis of physical fitness objective of Physical Education through inquiry into current research in medicine, physiology of muscular activity, and physical fitness appraisal and guidance.

640-641. Advanced Study of High School General Science (5-5). Pr., ED 473. Atkins
Intensive study of selected topics from the area of the high school general science program.

669. Physiology of Exercise (5). Pr., Undergraduate major or minor in health and physical education. Lapp
A study of experiences in the physiology of muscular activity and application of these to physical education and athletic situations.

Courses For Supporting Programs In Areas Of Specialization In Elementary, Secondary, And Agricultural Education

Undergraduate

101. Orientation: Personal and Professional (3). Staff
Designed to help transfers from other curricula and students enrolled in other schools achieve optimum personal, social and intellectual development as college students and to assist them in understanding teaching as a profession. (Students sectioned by area of specialization.) (Credit in ED 101 excludes credit in ED 102-3-4.)

102-3-4. Orientation: Personal and Professional (1-1-1). Staff
Designed to help freshmen achieve optimum personal, social, and intellectual development as college students and to assist in planning professional careers. (Students sectioned by area of specialization.) (Credit in ED 102-3-4 excludes credit in ED 101.)

200. Foundations (4). Lec. 3, Lab. 2. Pr., PG 213-214. All quarters. Staff
An analysis of basic information pertaining to philosophical, sociological and historical foundations, with emphasis on the relationship of these areas to human interactions and education. Lectures, discussion techniques, demonstrations, and field experiences in the public schools.

201. Education (2). Courses designed to help prospective teachers in the guidance of students.
(A) Exceptional Children, (B) Communication Problems, (C) Materials of Instruction, (D) Art Expression, (E) Music Experiences, (F) Measurement in Physical Education, (G) Improvement in Reading.

201L. Education (1). Lab. 2.
Laboratory courses may be taken concurrently with the corresponding lecture courses or independent of the lecture.

300. Principles and Practices in Education (4). Lec. 3, Lab. 2. Pr., PG 213-214 and ED 200 or equivalent. Staff
An examination of the purposes of public education in a democracy, study of curriculum, organization and administration of public education, school personnel, the role of the teacher in guidance, school finance and the school plant. Lectures, discussion techniques, demonstrations and field experiences in the public schools.

420. Educational Sociology (5). Pr., PG 212. Staff
Social environment in relation to the school and the child's responses to it; nature of society and function of the school therein; learner and the learning process; value and shortages of present school curriculums.

429. Problems of Health Education and Health Observation of School Children (5). Pr., junior standing. Evans, Lapp
Designed to help the teacher with the details of health observation and to aid in health guidance of individual pupils as well as to acquaint the teacher with the health services available through local and state departments.

453. Science and Modern Living (5). Pr., sophomore standing. Atkins
An interpretive course stressing the relationship of science to problems of personal and social living in modern technological society. The critical role of science in democracy.

473. General Science for Teachers (5). Lec. 4, Lab. 2. Pr., junior standing. Atkins, Newell, Nixon
Intended to give the teacher essential knowledge of such fields as earth science, meteorology, astronomy, nuclear energy, which constitute significant aspects of the general science program.

478. Nature of Mental Retardation (5). Pr., junior standing and ED 300. Carter, Dorné
Includes a study of the characteristics and nature of mental retardation. Etiology, indentification, and classification of retardation are investigated. Social, psychological, physical, and educational implications of mental retardation are considered.

490. Evaluation in Education (3). Lec. 2, Lab. 2. All quarters. Pr., student teaching or consent of department chairman. Staff
Examination of theories and techniques of testing and measurement, interpretation of educational statistics, self-evaluation and pupil accounting. Also, analysis and evaluation of social and educational problems affecting the total school program. Lectures, discussion techniques, demonstrations, and field experiences in the public schools.

Advanced Undergraduate and Graduate

471. Remedial Procedures in Reading (5). Callaway
Description given under courses in Elementary Education.

472. Books and Related Materials for Children (4). Dalton, Ellisor
Description given under courses in Elementary Education.

476. The Exceptional Child (5). Pr., senior standing and consent of instructor. Dorné
An introductory course that deals with the etiology, incidence, diagnosis and philosophy of teaching the exceptional child. Special attention is given to the child who is physically or mentally handicapped and to the child who is mentally superior.

482. Organization and Administration of School Libraries (5). Pr., junior standing. Millican
Description given under courses in Library Science.

484. Classification and Cataloging of Library Materials (5). Pr., junior standing. Millican
Description given under courses in Library Science.

AD 485. Audio-Visual Materials (5). Lec. 4, Lab. 2. Pr., junior standing. Deloney
Description given under courses in Agricultural Education.

486. Books and Related Materials for Young People (5). Pr., junior standing. Millican
Description given under courses in Library Science.

494. Organization of Instrumental Music (4). Pr., ED 414. Justice
Theory and practice in the organization and administration of instrumental music in public schools.

495. Organization of Choral Music (4). Pr., ED 414.
Theory and practice in the organization and administration of choral music in public schools.

496. Music in the Elementary School (5). Pr., junior standing. Justice
Description given under courses in Elementary Education.

497. Organization of Elementary School Music (4). Pr., ED 423.
Theory and development of the music program in the elementary school.

Undergraduate Courses In The Twelve-Grade Program In Teaching, Program, And Student Teaching In Elementary, Secondary, And Agricultural Education

Courses in Teaching for Students Pursuing Areas of Work in Relation to the Total School Program—Twelve Grades

These courses provide for examination, application, and scientific evaluation of methods, techniques, and procedures used in the different areas of the elementary and secondary school program. These will include such activities as resource unit preparation, observation and participation in actual classroom situations, and opportunities for actual participation in using different teaching techniques and procedures.

Students enrolled in Elementary Education whose program of study calls for a minimum of twenty-seven quarter hours of academic work in Art, Industrial Arts, Speech, Health and Physical Education, Music, Dramatic Arts, or Speech Therapy will take the course in Teaching in the area in which the academic work was completed. Students enrolled in Secondary Education are required to take one course in Teaching in both the major and minor areas.

During the summer quarter these courses will be open only to experienced teachers and special students attending either one or both terms and will be conducted on a seminar basis. The work will be directed and coordinated by one or more instructors in cooperation with contributions made by staff members from the different teaching areas represented in the class.

414. Teaching in Elementary and Secondary Schools (3). Lec. 2, Lab. 4. Pr., 9 hours Psychology, ED 200 or equivalent; Pr., or coreq., ED 300 or equivalent.

(A) Art (Fall, Teaching or Program, Winter)	Young
(B) Dramatic Arts (Fall, Teaching or Program, Winter)	Young
(C) Health and Physical Education (Winter, Spring)	Lapp
(D) Industrial Arts (Fall)	Bottoms
(E) Music (Fall, Teaching or Program, Winter)	Justice
(F) Speech (Fall)	Dorné
(G) Speech Correction (Fall)	Dorné
(H) Mental Retardation (Fall)	Carter

(Teaching and Program courses will be taught on a unified basis as experience and scheduling permit.)

Courses in Program for Students Pursuing Areas of Work in Relation to the Total School Program—Twelve Grades

These courses provide for making an analysis of the function and purpose of appropriate subject matter in the curriculum including an examination of basic philosophical assumptions and principles which form the basis for the selection and organization of curriculum content in the respective fields.

Students enrolled in Elementary Education whose program of study calls for a minimum of twenty-seven quarter hours of academic work in Art, Industrial Arts, Speech, Health and Physical Education, Music, Dramatic Arts, or Speech Therapy will take the course in Program in the area in which the academic work was completed. Students enrolled in Secondary Education are required to take one course in Program in both the major and minor field.

During the summer quarter these courses will be open only to experienced teachers and special students attending either one or both terms and will be conducted on a seminar basis. The work will be directed and coordinated by one or more instructors in cooperation with contributions made by staff members from the different teaching areas represented in the class.

423. Program in Elementary and Secondary Schools (3). Lec. 2, Lab. 2. Pr., 9 hours of Psychology, ED 200 or equivalent; Pr., or coreq., ED 300 or equivalent.

(A) Art (Spring, Program or Teaching, Winter)	Young
(B) Dramatic Arts (Spring, Program or Teaching, Winter)	Young
(C) Health and Physical Education (Fall, Spring)	Lapp
(D) Industrial Arts (Spring)	Bottoms
(E) Music (Spring, Program or Teaching, Winter)	Justice
(F) Speech (Winter)	Dorné
(G) Speech Correction (Winter)	Dorné
(H) Mental Retardation (Fall)	Carter

(Teaching and Program courses will be taught on unified basis as experience and scheduling permit.)

Student Teaching for Students Pursuing Areas of Work in Relation to the Total School Program—Twelve Grades

These courses provide the student an opportunity to live in a community and receive first-hand experience in teaching. The experiences include personal and professional contacts with the different aspects of community life and making application of concepts, skills, and knowledge of classroom situations.

The courses are organized on the lecture-laboratory basis. Students spend approximately one to two weeks in a lecture situation on the campus before reporting to their student teaching assignment. Eight to nine weeks are spent living in a community and working in the school. Upon completion of the off-campus experience, students return to the campus for one to two weeks for lectures, discussions, and evaluation.

All students participating in student teaching on a total school program basis are required to engage in student teaching and observation at both the elementary and the secondary level. The student should have completed a large part of the work in both the major and minor areas of specialization before doing student teaching.

During the summer quarter these courses will be open only to experienced teachers and special students enrolled for the quarter will be conducted on a seminar basis. The work will be directed and coordinated by one or more instructors in cooperation with contributions made by staff members from the different teaching areas represented in the class. Observation and practice experiences will be provided in keeping with individual and group needs.

425. Student Teaching in Elementary and Secondary Schools. Twelve Grades (10 or 15). Lec. 5, Lab. 20. Pr., 9 hours of Psychology, ED 200 or equivalent; ED 300 or equivalent, two courses in Teaching and Program, and junior or senior standing.

(A) Art	Young
(B) Dramatic Arts	Young
(C) Health and Physical Education	Lapp
(D) Industrial Arts	Bottoms
(E) Music	Justice
(F) Speech	Dorné
(G) Speech Correction	Dorné
(H) Mental Retardation	Carter

Courses In Library Science Serviced By Departments Of Agricultural, Elementary, And Secondary Education

Advanced Undergraduate and Graduate

472. Books and Related Materials for Children (4).
Examination and evaluation of printed and other types of materials in view of their relevance to the needs and interests of various age and grade levels of elementary school children. Study of selection aids, principles, and criteria for selecting materials.

482. Organization and Administration of School Libraries (5). Pr., junior standing. Millican
Basic organization of books, non-book materials, and services for effective use in school libraries. Administering the budget, selection and purchase of materials, preparation of materials for use, circulation of materials, inventory, care and repair of materials, and instruction in the use of library materials are considered.

484. Classification and Cataloging of School Library Materials (5). Pr., junior standing. Millican
Principles and procedures of classifying and cataloging books and other printed materials, filmstrips, recordings, and community resources. The vertical file, the Dewey decimal system of classification, Wilson and Library of Congress printed cards, and subject headings are studied.

AD 485. Audio-Visual Materials (5). Lec. 4, Lab. 2. Winter, Summer. Pr., junior standing. Deloney
Description given under courses in Agricultural Education.

486. Books and Related Materials for Young People (5). Pr., junior standing. Millican
Study and evaluation of books and other types of materials in relation to the interests, needs, and abilities of young people of high school age. Attention is given to selection aids, principles and criteria of selection, reading guidance, and significant investigations concerning young people's reading.

487. Practicum in School Library Services (4-6). Lec. 2, Lab. 4-8. Pr., junior standing. Millican
The lectures in this course provide students with information pertaining to methods used in the operation of libraries in elementary and secondary schools. Supervised laboratory experiences are provided in materials centers containing a variety of materials for the different grade levels and involving children and youth of varying ages in the public school.

Graduate

AD 609. Selecting, Creation, and Use of Audio-Visual Materials (5). Lec. 3, Lab. 4. Pr., AD 485 or consent of instructor. Winter, Summer. Deloney
Description given under courses in Agricultural Education.

610. Reference Materials and Service (5). Pr., 10 hours in library service at the 400 level. Millican
Study and evaluation of basic reference sources for effective reference service in school libraries. Elementary research methods of locating information and the role of various types of reference books as resource material in curricular units are considered.

611. Principles of School Librarianship (5). Pr., 10 hours in school library service at the 400 level. Millican
Place and function of library service in the American educational system. Historical development of libraries; library services to teachers and pupils as an integral part of the school program; standards and administrative policies are included.

612. Problems in the Administration of the School Library Services (5). Pr., 10 hours in school library service at the 400 level. Millican
Opportunities for study and research regarding current problems in relation to developing an effective program of school library service. Administrative plans, procedures and relationships; room and equipment planning; library regulations, personnel and committees; reading guidance and reference service; publicity, statistics, and reports; and operation, evaluation, and supervision of library services are potential areas of emphasis.

613. Library Services in the School and Community (5). Pr., 10 hours in library service at the 400 level. Millican
School library-community relations; historical background, current trends, problems and programs of service; relation to public and rural library extension service; selection of materials on the basis of community and curriculum needs; book lists and exhibits.

Graduate Courses In Foundations And Philosophy In Agricultural, Elementary, And Secondary Education

AD 601. Social Foundations of Education (5). Winter, Summer. Montgomery
Description given under courses in Agricultural Education.

AD 604. Adult Education (5). Summer, Winter. Pruett
Description given under courses in Agricultural Education.

635. Education in Modern Society (5). Callaway, Punke
The universal and continuing need for education, various opportunities for learning, the public school and its role for the individual and society, educational purpose and its sources, significance for the curriculum, teaching, learning, and leadership.

636. Philosophy of Education in America (5). Pr., ED 635. Callaway, Punke
Major American contributions to the philosophy of education and their influence on educational practice. Need for re-examining concepts in the light of recent scientific and cultural developments.

637. Development and Status of Educational Philosophy (5). Pr., ED 635. Punke
Social and historical development of philosophical thought regarding education, with emphasis on its implications for the Western World. Major philosophical problems facing education today, in the light of the development noted.

639. Comparative Education (5). Pr., ED 635. Punke
Comparison of the educational systems of leading foreign nations and the United States, giving attention to the historic origins of the different systems and to their present sociological and philosophical significance.

Graduate Courses In Curriculum And Teaching In Elementary And Secondary Education

Curriculum and Teaching in the Total School Program

These courses are designed to assist teachers, supervisors, guidance personnel, and administrators in developing understandings and competencies essential to total school improvement with attention given to all levels of the school program.

643. Education of the Physically Handicapped (5). Pr., adequate courses in physiology and psychology. Dorné
A study of the characteristics of major physical disabilities; the psychology of the physically handicapped; the educational objectives with curriculum adaptations; and related aspects of a total program for the physically handicapped.

645. Current Problems in Education (5). Pr., Teaching experience. Staff
Emphasis is given to instructional problems of the classroom teacher, and problems associated with administering and supervising the total school program.

646. Studies in Education (1-3). Pr., One quarter of graduate study. Staff
Study of a problem using research techniques. The problem will be selected in consultation with the professor who will supervise it. A problem should be selected which will contribute to the program of the student. (Credit in ED 651 prior to 1960 excludes credit in this course.)

647. Foundations in Curriculum and Teaching (5). Ellisor, Hollaway
Historic sources of curriculum and teaching materials reviewed in the light of recent investigations and curricular experiments; conflicting conceptions of the nature of the curriculum and the sociological implications of these conflicts; methods of curricular reorganization in elementary and secondary schools.

648. Advanced Study of Curriculum and Teaching (5). Pr., ED 647 or consent of departmental chairman. Ellisor, Hollaway
Major issues, frontier developments, and trends in the improvement of curriculum and teaching in elementary and secondary schools.

649. Educational Trends and the Basic Skills (5). Primarily for elementary and junior high school teachers. Callaway, Dalton
A critical study and evaluation of recent developments in the elementary and junior high school with implications for teaching the basic skills.

650. Teaching the Mentally Retarded (5). Corequisite, ED 476. Carter, Dorné
Provides for observation and participation under supervision in educational programs for the mentally retarded. Lectures and discussions will implement the student's work in the classroom. Students will develop and evaluate plans and programs for the special class. (For teachers pursuing a program of education for mentally retarded children.)

Curriculum and Teaching in the Respective Areas of the School Program

Each of the courses listed below may be used for each area of the school program. The areas include: (A) Art, (B) Business Education, (C) Dramatic Arts, (D) Foreign Languages, (E) Gifted, (F) Health and Physical Education, (G) Home Economics, (H) Industrial Arts, (I) Language Arts, (J) Mathematics, (K) Mental Retardation, (L) Music, (M) Science, (N) Social Science, (O) Speech, and (P) Speech Correction.

651. Research Studies in Education in Areas of Specialization (5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education. Staff
Review, analysis, and interpretation of available research with emphasis on designing new research to meet the changing needs of the school. (Subject areas A-P.)

652. Curriculum and Teaching in Areas of Specialization (5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education. Staff
A critical study of teaching practices and reappraisal of selecting experiences and content for curriculum improvement. (Subject areas A-P.)

653. Organization of Program in Areas of Specialization (2-5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education. Staff
Advanced course devoted to a study of program, organization, and development of basic and supplementary materials for guiding teachers, faculties, and school systems in the continuous improvement of curriculum and teaching practices. (Subject areas A-P.)

654. Evaluation of Program in Areas of Specialization (2-5). Pr., 18 hours of appropriate subject matter and 36 hours of psychology and professional education. Staff
Evaluation and investigation of teaching effectiveness with attention also given to the utilization of human and material resources and the coordination of areas of specialization with the total school program and with other educational programs of the community. (Subject areas A-P.)

Curriculum and Teaching with Concentration in the Area of Reading

These courses constitute an area of specialization in the field of reading. ED 471 listed as a prerequisite for ED 656 is designed for the classroom teacher and supervisory personnel. ED 655 may be taken by the classroom teacher and supervisory personnel. ED 656 will be taken only by persons interested in developing an area of specialization appropriate for consultative and supervisory services.

655. Problems in Improvement of Reading (5). Callaway
An examination of techniques of effective reading instruction in developmental reading from grades one through twelve. Emphasis on techniques, comprehension, study skills, vocabulary, and other related areas in the reading program and in the content areas.

656. Directed Individual Study in Reading Diagnosis and Reading Remediation (5-10). Pr., ED 471, or consent of departmental chairman. Callaway
Clinical experiences in diagnosing problems in reading and related areas. Also clinical experiences in the remediation of reading problems.

Curriculum and Teaching for Advanced Students

These courses are designed to provide opportunity for advanced students to participate in study planning, and field experiences associated with research and experimentation in curriculum and teaching.

658. Seminar and Independent Study in Curriculum and Teaching (5). Pr., ED 647 and 648. Staff
Research and experimentation in elementary and secondary schools in the development of education programs and the improvement of teaching and learning. Appraisal of significant curriculum research, exploration of areas of needed research in curriculum and instruction, and study of fundamental criteria and methods for solving curriculum problems.

659-660. Laboratory Experience in Curriculum and Teaching (5-5). Pr., Master's Degree in Education. Staff
These courses provide for doctoral students to work in actual school situations on problems in curriculum and teaching under staff guidance.

Graduate Course In Higher Education In Elementary And Secondary Education

663. The American College and University (5). Punke
Philosophy and function, the university and social change, the community college, academic freedom, student-faculty-community relationships, international flow of educational ideas, government cultural programs, higher education and the state.

Graduate Courses In Administration, Supervision, And Guidance

Acting Head Professor Pierce
Professor White
Associate Professors Saunders, Sharp and Tincher
Assistant Professors Nunnery and Stalcup

Prerequisites and corequisites in the Department of Administration, Supervision, and Guidance are: experience in teaching; employment or definite professional objectives leading to employment in administration, supervision, or guidance; ED 681, 670 or 621, or equivalent, as prerequisite or corequisite to advanced courses in any one of these specialized areas; and AD 601, PG 617, ED 645 and ED 661, or equivalent, as prerequisite or corequisite to specialized study in administration, supervision, or guidance.

618. Organization and Administration of Higher Education (5).
A course designed to provide a study of the organization, administration, and evaluation of institutions in terms of the academic program, student personnel services, business affairs and related programs.

621. Guidance in the Public Schools (5). Nunnery, Sharp
A basic course in guidance for superintendents, principals, teachers and other guidance personnel. Among topics covered are: philosophy and principles of guidance, function and services, organizational procedures, administration and evaluation; the role of teachers, administrators and guidance staff.

627. Problems in Guidance (5). Nunnery, Sharp
A course designed to provide opportunities for guidance personnel to apply the scientific method to the solution of problems arising from their experiences in public schools.

628. Counseling in the Public Schools (5). Sharp, Tincher
A course designed to assist teachers and other guidance personnel in acquiring knowledge, understanding and skill regarding counseling as a helping relationship. Emphasis is given to counseling in the classroom and the information and skills appropriate to counseling.

632. Organization and Administration of Guidance Programs (5). Sharp
A course designed for administrative and guidance personnel. Its primary purpose is to identify the major functions of education, perceive guidance in this perspective and then to study the organization, administration and evaluation of guidance programs in their educational setting. Topics discussed include principles of administrative practice, role of staff in regard to the guidance program, organizational patterns for guidance programs, possible ways of initiating a guidance program, and means of evaluation.

633. Analysis of the Individual (5). Nunnery, Sharp
The purpose of this course is to assist teachers and other guidance personnel in acquiring knowledge, understanding and skill necessary to obtain records and appraise information about the pupil as an individual and as a member of a group. Attention is given to the use of standardized test data; however, primary emphasis is placed on other tools and techniques for securing and analyzing information about pupils and their use in counseling.

638. Information Service in the Guidance Program (5). Sharp
The purpose of this course is to assist guidance personnel in acquiring knowledge, understanding and skill relative to collecting, evaluating and interpreting occupational, educational, and related information for guidance purposes. Emphasis is placed on the value and necessity of work, educational and occupational opportunities, results of recent educational and occupational research, methods of studying occupations, community occupational and educational surveys; orientation for educational and occupational purposes, and maintaining and using occupational and educational information in counseling.

670. Supervision of the Instructional Program (5). Nunnery
A course designed to assist superintendents, supervisors, principals, teachers, and other educational leaders in understanding the meaning, purpose and function of supervision, and in understanding the basic factors involved in the improvement of teaching and in understanding and evaluating the various concepts of educational leadership as they apply to the improvement of teaching effectiveness.

681. Organization and Administration of Public Education (5). Saunders
An introductory course designed for superintendents, principals, teachers, and other educational leaders. Topics covered include: purposes of organization and administration; organization and administration on federal, state, and local levels; financial support and accounting; operation of plant; school-community interaction; and personnel administration.

683. The Leadership Role in Educational Administration (5). Saunders
A study of current theories, concepts and principles of leadership and their application to education. Further emphasis is placed on the responsibility of the educational administrator for leadership in the school and community; responsibility for leadership in the continuous improvement of staff competence and principles and evaluation of effective leadership.

685. Current Trends in Organizing and Administering Public Education (5). Nunnery
A study of current theories, concepts and principles of organization and administration and their application to public education, the relationships of organization and administration to instructional programs; the role and function of governing and regulatory boards and agencies, and an analysis of current problems and issues in organization and administration.

688. School Finance and Business Administration (5). Nunnery, White
A study of the relationships of finance and business management to the quality of education. Emphasis is also placed on theories and principles of school support including responsibility of federal, state and local agencies; state foundation programs, preparation, and administration of salary schedules, budgeting and business administration including purchasing and accounting insurance and bonding.

689. Planning and Maintenance of School Buildings (5). White
A study of the relationships of plant and plant maintenance to the quality of education; an analysis of population growth and distribution as related to building needs; selection of sites, finance programs, problems of building utilization, evaluation, equipment, maintenance and custodial services.

690. Administering Auxiliary Services in the Public Schools (5). White
A study of the purposes and role of auxiliary school services. Special attention is given to the administration of transportation, school lunch, safety, health and medical problems.

692. Constitutional, Statutory and Judicial Foundations of Education (5). White
A study of the constitutional and statutory provisions for education and an analysis of judicial decisions affecting education. Among other topics included are: authority and responsibility of the teacher; rights, privileges and responsibilities of students; use of school property, taxation, curriculum, contracts and retirement provisions; contractual capacity and liability, and transportation.

693. Personnel Administration (5). Nunnery, White
A course designed to assist superintendents, supervisors, principals, and other educational leaders in acquiring knowledge and developing understandings with respect to the relationships between effective personnel administration and the quality of education. Emphasis is placed on outcomes of recent research and experimentation in areas such as morale, welfare, work loads, pupil accounting, and bases for salary determination as they relate to staff and pupil personnel.

694. Case Studies in Counseling (5). Pr., permission of the instructor. Sharp
Designed to develop competency in the application of counseling theory and associated techniques, with special emphasis on school problems. Investigations and applications made through the use of case studies.

695-6. Practicum in Guidance and Counseling (5-5). Pr., permission of the instructor. Sharp
The practicum provides graduate students with supervised field experiences with emphasis on the application of concepts, principles, and skills acquired in previous course work.

697. Student Personnel Work in Higher Education (5). Sharp, Tincher
Theories, principles, practices, organization, administration, and evaluation of student personnel services in higher education.

Graduate Courses In Research, Statistics, Thesis, And Dissertation In Administration, Supervision, And Guidance; Agricultural; Elementary; And Secondary Education

661. Research and Experimentation in Education (5). Staff
Need for the continuous improvement of education through sound solutions to educational problems. The scientific method and its significance for improving education. Methodology in educational research and experimentation.

672. Statistical Methods in Education (5). Staff
The need and importance of applying statistical methods to the study of educational problems, statistical methods appropriate to education, and interpretation of meanings of statistical analyses.

673. Research and Experimental Design (5). Pr., ED 672. Staff
Relationship of design to validity; significance of variables, testing hypotheses, evaluation of research and research findings.

699. Thesis Research (5). May extend beyond one quarter. Staff

798. Research and Thesis (5). Staff

799. Doctoral Research and Dissertation (Credit to be arranged). Staff

Electrical Engineering (EE)

Professors Spann, Carlovitz, Honnell, Summer and Weaver
Associate Professors Chadwick, Graf, Holmes, Nichols, Russell, Sprague and Sturrock
Assistant Professors Feaster, Miller and Slagh
Instructors Albritton, Campbell, Conner, Littleton, Lyon and McKay

202. Electrical Engineering Fundamentals I (5). Pr., MH 262 and Coreq., PS 203.
Ohm's and Kirchoff's Laws; properties of conductors, nonlinear elements.

203. Electrical Engineering Fundamentals II (5). Pr., EE 202, MH 263.
Magnetic circuits and fields; induced E.M.F.; dielectric properties; electric fields.

304. Electric Circuits (5). Pr., MH 252 or 263 and PS 203 or 206.
Basic electrical circuits; electric energy rates; characteristics of electrical machinery. For non-electrical engineering students.

305. Electronics and Machinery (5). Pr., EE 202.
Basic electrical and electronic circuits; characteristics of electrical machinery.

307. Illuminating Engineering (5). Pr., junior standing.
The general principles of illumination and photometry.

309. Direct Current Machinery (5). Pr., EE 203 and Coreq. EE 331 and junior standing.
A detailed study of direct current generators, motors, and control apparatus.

310. Direct Current Laboratory (1). Lab. 3. Corequisite, EE 309.
A laboratory study of the principles discussed in EE 309.

312. Alternating Current Laboratory I (1). Lab. 3. Corequisite, EE 331.
Experiments on circuits studied in EE 331.

316. Electrical Measurements (3). Lec. 2, Lab. 3. Pr., EE 331 and MH 264.
Precision measurements of electrical quantities; instrument errors; polyphase power measurements; group resistance; circuit protective devices.

320. Electronics (5). Pr., EE 331 and Coreq., EE 321 and junior standing.
Vacuum tube characteristics; gaseous tube characteristics; vacuum and gaseous control circuits applied to industrial problems; rectification circuits; transistors.

321. Electronics Laboratory (1). Lab. 3. Corequisite, EE 320.
A laboratory course to illustrate the subjects discussed in EE 320.

331. Circuit Analysis I (5). Pr., EE 203 and MH 264 and junior standing.
AC circuit analysis; vector representation; network theorems; Fourier series and Fourier integral analysis.

332. Linear Transient Analysis (5). Pr., EE 331, MH 361 and junior standing.
Transient and complex plane frequency analysis; Laplace transforms applied to transient analysis of physical systems; coupled circuits.

333. Circuit Analysis II (5). Pr., EE 332, MH 402 and junior standing.
Networks and filters; balanced and unbalanced polyphase circuits.

340. Communications Engineering I (5). Pr., EE 332 and EE 320.
Analysis of electron-tube circuits, tuned and untuned, with an introduction to pulse circuit techniques.

341. Communications Engineering Laboratory I (1). Lab. 3. Corequisite, EE 340.
Experiments on circuits studied in EE 340.

402. Alternating Current Machinery I (5). Pr., EE 332 and junior standing.
Transformers, induction motors, and other apparatus.

403. Alternating Current Laboratory II (1). Lab. 3. Pr., junior standing. Coreq., EE 402.
Laboratory exercises to study transformers, induction motors, transmission lines, voltage regulators, and symmetrical components.

404. Telephone Engineering (5). Lec. 4, Lab. 3. Pr., EE 331 and junior standing.
Telephone circuits and equipment with suitable laboratory experiments.

405. Electric Power Systems (5). Pr., EE 402 and junior standing.
A general study of generating stations and substations; stability of power systems.

406. Symmetrical Components (5). Pr., EE 333 and junior standing.
The solution of unbalanced polyphase circuits or balanced circuits with unbalanced terminal voltages.

408. Advanced Alternating Current Circuits (5). Pr., EE 332 and MH 402 and junior standing.
Network theorems and analysis, filters, non-linear circuits, and electro-mechanical analogies.

410. Power Transmission Lines (5). Pr., EE 333, MH 402 and junior standing.
A general discussion of power transmission lines.

413. Alternating Current Machinery II (5). Pr., EE 333 and junior standing.
Alternating current generators and synchronous motors.

414. Alternating Current Laboratory III (2). Lec. 1, Lab. 3. Pr., junior standing; Coreq., EE 413.
Laboratory exercises to study characteristics of alternators, synchronous motors, their controls and system operation.

430. Radio Transmission Lines (5). Pr., EE 332, MH 402, and junior standing.
Theory of high frequency transmission lines and filters.

431. Antenna Systems (5). Pr., EE 430, EE 450 and junior standing.
Impedance matching, theory of antennas, radio wave propagation.

433. Frequency Modulation (5). Pr., EE 448, MH 361 and junior standing.
Frequency modulation transmitters and receivers.

438. Advanced Ultra-High Frequency Circuits (5). Lec. 4, Lab. 3. Pr., EE 450, EE 430 and junior standing.
Ultra-high frequency oscillators, slotted lines, horn reflectors; the klystron and magnetron.

439. Electric Waves (5). Pr., EE 448, MH 402 and junior standing.
Advanced mathematical analysis of electric and magnetic fields.

440. Television Engineering (5). Pr., EE 448 and junior standing.
Cathode ray tubes and circuits; wide-band amplifiers; television receivers and transmitters; color television.

441. Radio Frequency Measurements (3). Lec. 2, Lab. 3. Pr., junior standing; Coreq., EE 448.
Measurement of circuit constants at radio frequencies; frequency, antenna, and field strength measurements; voltage, current, and power at radio frequencies.

442. Industrial Electronics and Control Circuits (5). Lec. 4, Lab. 3. Pr., EE 320 and junior standing; Coreq., EE 333.
Electrical circuits for industrial applications; methods for automatic control and regulation with an introduction to principles and analysis of servomechanisms.

443. Transistor Electronics (5). Lec. 4, Lab. 3. Pr., EE 448, MH 402 and junior standing.
Transistor theory and physical concepts; characteristics; applications in electronic circuits (audio, video, and radio frequencies); control circuit applications; advantages and disad-

vantages of transistors for several different types of general problems. The laboratory stresses transistor fundamentals and design of circuits involving transistors.

444. Fundamentals of Digital Computers (5). Pr., EE 320 and junior standing.
A study of digital techniques; application of number systems to electronic circuits and electrical devices.

445. Nuclear Instrumentation (5). Lec. 4, Lab. 3. Pr., EE 320, EE 333 and junior standing.
A study of the electrical engineering aspects of reactor control and nuclear instrumentation.

448. Communications Engineering II (5). Pr., EE 340, MH 402, and junior standing.
Radio frequency circuit theory and applications.

449. Communications Engineering Laboratory II (1). Lab. 3. Pr., junior standing; Coreq., EE 448.
Experiments on circuits studied in EE 448.

450. Applied Electromagnetism (5). Pr., EE 332, MH 402 and junior standing.
Vector analysis, basic laws and equations of electromagnetism, development of Maxwell's equations, wave propagation and reflection.

451. Communications Engineering Laboratory III (1). Lab. 3. Pr., junior standing. Coreq., EE 430.
Experiments on circuits studied in EE 430.

453. Communications Engineering Laboratory IV (1). Lab. 3. Pr., EE 430, EE 450, and junior standing.
Experiments on antenna systems.

GRADUATE COURSES

610. Power Transmission Systems (5). Pr., EE 614, EE 613.
Power transmission systems operating under both normal and fault conditions; problems of design, protection, relaying, and metering; various types of instabilities; the utilization of network analysers of various types.

611. High Voltage Phenomena (5). Pr., EE 614.
Study of high voltage phenomena such as lightning and corona discharge; analysis and design of associated equipment such as surge generators and protective devices; contemporary problems of high voltage power transmission, grounding, and insulation.

612. Advanced Electrical Machine Design (5). Pr., EE 614.
The methods of Kron, Parks, and Fortescue applied to both steady state and transient conditions; space harmonics and hunting; emphasis on equipment currently in use by power transmission systems and industrial plants.

613. Transmission Lines (5). Pr., EE 614.
Unified study of all types of wire transmission lines; special cases including taper, nonuniform insulation, and unbalance to ground; general theory and utilization of charts; stubbing; per-unit techniques.

614. Transients in Linear Systems (5).
Transients in lumped and distributed parameter systems by classical and transform techniques. Associated material in differential equations, complex variables, and dynamics.

615. Advanced Electrical Measurements (5). Lec. 4, Lab. 3.
Measurement of circuit parameters, current, voltage, power, frequency, and wave shape at all frequencies; capabilities and limitations of contemporary measuring equipment.

616. Advanced Ultra-High Frequency Circuits (5). Pr., EE 614, EE 450.
Maxwell's Equations applied to ultra-high frequency devices; wave guides, cavity resonators, matching and coupling elements; design of microwave networks.

617. Principles of Pulse Circuits (5). Lec. 4, Lab. 3. Pr., EE 614.
Analysis and design of basic types of pulse forming circuits, with applications to radar, television, pulse-modulation systems, and laboratory instrumentation; laboratory experiments upon basic circuits studied with laboratory work suited to the individual student's needs.

618. Advanced Closed-Loop Control Systems (5). Lec. 4, Lab. 3. Pr., EE 614, EE 442.
Correlation of frequency and transient response; regulation of lumped and distributed parameter systems; modulated carrier systems; sampled-data systems and z transforms; off-on systems by phase plane and method of Kochenburger; topics associated with contemporary publications.

620. Network Synthesis (5). Pr., EE 614.
Synthesis of passive two-terminal and four-terminal networks; energy relations; fundamental properties of driving-point immittances; electro-potential analogy; conventional and insertion loss method of design.

621. Electronic Computer Theory (5). Lec. 4, Lab. 3. Pr., EE 614.
General study of computer components; operational amplifiers, function generators, multipliers, stabilized power supplies; pulse circuits, memory storage devices and read-out devices; techniques of computer operation.

690. Seminar. Credit to be arranged. (May be taken more than one quarter.)

699. Research and Thesis. Credit to be arranged. (May be taken more than one quarter.)

Engineering Graphics (EG)

Professor Francis
Associate Professors Collins, Ingram, Little, McClung and Mitchell
Assistant Professor Klepinger
Instructors Boykin, Johnson, Jones, Wilhelm and Zurfleih

The Department of Engineering Graphics is a service department to the School of Engineering. However, the courses offered in this department may also be taken by the students in other schools who desire to receive such information on graphic subjects useful in their particular field.

The courses as given below for the first year students are designed to give the theory and practice in Engineering Drawing and Descriptive Geometry serving as fundamental subjects in all engineering curricula. Those to be given as second year courses furnish not only the theory of graphical solution of engineering problems, but prepare the student for more advanced courses such as Applied Mechanics, Strength of Materials, and Machine Design.

This department has well-illuminated drawing rooms with adequate illumination for night work. A model making shop is equipped with necessary tools and machines to make models for class room use. The department also has up to date printing equipment for ozalid prints, and a Thermo-Fax machine for photographic prints.

102. Engineering Drawing I (2). Lab. 6. Pr., Plane Geometry.
Use of instruments; lettering practice; geometric constructions; principle views in projection; auxiliary and section views; dimensioning; detail working drawings; and isometric projection.

104. Descriptive Geometry (2). Lab. 6. Pr., EG 102 and Solid Geometry.
Basic principles pertaining to points, lines, and planes; including problems on sections, developments, and intersections of solids.

105. Engineering Drawing II (2). Lab. 6. Pr., EG 102.
Technical sketching; reading analysis of shop drawings; machine parts, detail and assembly drawings; types and arrangement of materials; titles and symbols; tracings, printing, and other reproduction methods; steel and timber structures; riveting and welding.

204. Kinematics of Machines (3). Lec. 2, Lab. 3. Pr., EG 104, EG 105, and coreq., PS 201.
A study and graphical analysis of the fundamental elements of machines, including: definitions, velocity and acceleration diagrams, methods of transmission of motion by links, cams, gears, gear trains, and flexible connectors.

205. Applied Graphic Statics (2). Lec. 1, Lab. 3. Pr., EG 105 and coreq., PS 201.
Resultants and equilibrium of concurrent, parallel and non-parallel forces; moments of parallel forces; general cases of reaction of coplaner forces; stresses in simple trusses by joint and section methods; cranes, derricks, dredges, and frames with bending members; static forces in machines with and without friction.

206. Technical Sketching (2). Lab. 6. Pr., EG 104 and EG 105.
Technical lettering, block and architectural; types of illustrations, purpose and use; sketching techniques; pictorial drawings, oblique, isometric, dimetric, trimetric; perspective; shading; use of the airbrush; charts; reproductions of drawings.

306. Advanced Graphics for Engineers (3). Lec. 2, Lab. 3. Pr., EG 104, MH 361.
Vector geometry, functional scales, nomography, combination of observations, empirical equations, and graphical calculus.

GRADUATE COURSES

612. Design of Jigs and Fixtures (5). Lec. 3, Lab. 6. Spring. Collins
Study of accepted types of jigs, fixtures and dies; production rates, expense and savings, automatic tooling design, indexing operations.

620. Patents (5). Winter. Little
Patentability, claims, patent office procedures, foreign patents, role of patent attorney, patent drawings, sale and exploitation of patents.

English (EH)

Head Professor Patrick
Professors Current-Garcia, Gosser, Haines, Hoepfner, McCann, and Moore
Associate Professors Amacher, Benson, Breyer, Burnett, and Woodall
Assistant Professors Anne W. Amacher°, Butler, Faulk, Hudson, Jackson, M. P. Jones, Kaminsky, Littleton, McLeod, Melzer, Polhemus, Rose, and Stroud
Instructors Cole, Faust°, Hearn, Kehoe, Lacerva, Lawson, Lehmann, Saunders, Sewell, Silverman, Sullivan, Taylor, Van Etten°, Weissinger°, and Zivkovic
Graduate Assistants Clulow, Crain, Daniel, Fuller, Gerber, Hancock, Ingram, Jeanette Jones, Lamar, Mitchell, Patterson, Rosenberg, Sutherlin, Teague, Thomas, Townley, and Welsh

The instructional program of the English Department comprises (1) basic courses in composition and literature for all students, (2) journalism courses for students desiring training in that subject, (3) upper-division undergraduate courses for English majors and minors and for students seeking general electives, and (4) graduate courses for students working for the Master of Arts and Doctor of Philosophy degrees.

Requirements for the Undergraduate Major

1. In addition to completing the general requirements for the liberal arts major listed on p. 139, the Science and Literature English major will also take a fourth quarter of foreign language and History 472.

2. In selecting the minimum seven course program of 300-400 courses, the major is expected to work out a balanced program with his English faculty adviser. This program should include: (a) one course from this group: EH 390, 401, 441; (b) three courses selected from different periods, each of the three emphasizing a different type of literature (*i.e.*, fiction, poetry, drama); (c) three survey or period courses dealing with the literature of different ages.

For Requirements for Graduate Study in English, see the Graduate School Bulletin.

010. Remedial English (5 hrs. lec.—non-credit). Fall, Summer.
A remedial course in the fundamentals of grammar and composition.

101-2. English Composition (5-5). EH 101 pr. for EH 102. All quarters.
A course in the essentials of grammar, composition, and reading.

103-4. English Composition for Superior Students (5-5). All quarters.
Reading and composition for superior students.

108. Classical Literature (5). Pr., EH 101-2 or 103-4. All quarters.
The reading and discussion of significant works of classical Greek and Roman literature with emphasis on the western heritage of ancient thought.

141. Medical Vocabulary (5). Pr., EH 101-2 or 103-4. All quarters. Gosser
A course dealing with prefixes, suffixes, and the more common root words of medical terminology.

208. Literature of the Western World (3). General elective. Pr., EH 101-2 or 103-4, and EH 108 or EH 253. All quarters.
The study of about eight significant literary works of the Western World which provide representative views of man in the Medieval, Renaissance-Reformation, and Eighteenth Century periods.

241. Scientific Terminology (5). Spring. Gosser
A study of word parts in the terminologies used in the medical, natural, and physical sciences. As far as is practicable, each student's work is channelled in the direction of his special needs.

253. Literature in English (5). All quarters.
A study of the literature of England from 1400 to 1800.

254. Literature in English (5). All quarters. Pr., EH 253.
A study of English and American literature of the nineteenth and twentieth centuries.

301. Creative Writing (3). General elective. Fall, Spring. Jones
A course devoted principally to the writing and criticizing of short stories. But the student may be permitted to write poetry, drama, or any other form of imaginative literature.

302. Creative Writing (3). General elective. Fall, Spring. Jones
A continuation of English 301.

304. Technical Writing (3). All quarters. McCann and Staff
Not open to students with credit in EH 345. Report writing for engineers.

° Temporary.

310. Word Study (3). General elective. Fall, Spring. Gosser
A study of the history of English words and their meanings with the object of improving the student's command of his language and illustrating for him some of the patterns in the development of human thought.

312. The European Novel (5). Spring. Rose
The reading and analysis of significant novels by major European writers.

320. An Introduction to Drama (3). General Elective. Winter. Hoepfner
Representative tragedies and comedies of Europe from antiquity to the present. Such figures as Sophocles, Moliere, Shakespeare and Ibsen will be considered.

325. The Short Story (5). Winter. Jones, Patrick
The development of the short story in America and Europe from the early nineteenth century to the present.

330. Medieval Literature in Translation (5). Spring. Moore
The study of masterworks of English and European literature produced from 1250 to 1400.

340. The Classical Background (5). Winter. Not open to students with credit in EH 108. Breyer
Readings from the major Greek and Roman writers. The texts studied are chosen with particular attention to their subsequent influence upon English and American literature.

345. Business and Professional Writing (5). All quarters. Staff
A course in practical composition including abstracting, correspondence, and reports for students in business administration and pre-professional science.
NOT OPEN TO ENGLISH MAJORS OR MINORS. Students cannot earn credit in this course and also in EH 304.

350. Shakespeare's Greatest Plays (3). General elective. Fall. Not open to students with credit in EH 451-2. Hoepfner
A study of some of Shakespeare's masterpieces.

352. Contemporary Fiction (5). Fall. Benson
American and British novelists from Lawrence to Faulkner.

353. Contemporary Drama (5). Spring. Amacher
Continental, British, and American dramatics from Ibsen to the present day.

357. Survey of American Literature (5). Fall. Current-Garcia, Patrick
American literature from the beginning to 1860.

358. Survey of American Literature (5). Spring. Current-Garcia, Patrick
American literature from 1860 to the present.

360. Continental Fiction (3). General elective. Winter.
A study of representative European short stories and novels.

361. History of English Drama (5). Winter. Hoepfner, Littleton
English drama from the medieval period to 1900.

363. Eighteenth Century English Literature (5). Fall. McCann
A survey of poetry and prose from Dryden through Shenstone.

365. Southern Literature (3). General Elective. Spring. Current-Garcia, Patrick

372. The American Novel (5). Fall. Current-Garcia, Patrick
The development of the American novel from the beginning to 1900.

381. The Literature of the Age of Reason (3). General elective. Fall. Amacher
A study of rationalism, its assumptions and effects, political, social, and scientific as seen in the works of such major eighteenth-century writers as Locke, Johnson, Burke, Voltaire, and Rousseau.

385. The Impact of Science and Technology upon Modern Literature (3). General elective. Winter. Amacher
An investigation of a few major 19th and 20th century writers who reflect in their works the impact of scientific theory and methodology upon traditional, cultural, and philosophical values.

390. Advanced Composition (5). All quarters. Faulk
The practice and theory of expository writing; the command of language for the clear and forceful communication of ideas.

401. Advanced English Grammar (5). Fall, Spring. Pr., junior standing. Haines
A study of both formal and functional grammar.

410. European Literature (5). Fall. Pr., junior standing.
A survey of the principal European literary figures and trends from the Renaissance to the present, with emphasis on the literature of Italy, France and Germany.

441. History of the English Language (5). Winter. Gosser
A study of the chronological development of the English language.

450. Contemporary Poetry (5). Winter. Pr., junior standing. Benson
The chief modern poets of England and America.

451-2. Shakespeare (5-5). Winter, Spring. Pr., junior standing.
The first quarter deals with the plays written before 1600, emphasizing comedies; the second, with the plays written after 1600, stressing tragedies.
Credit for either or both of these courses excludes credit for EH 350.

456. The English Romantic Movement (5). Spring. Pr., junior standing. Breyer
A survey of Romantic poetry from Gray to Keats.

457. Victorian Literature (5). Spring. Pr., junior standing. Woodall
The major poets and non-fiction writers from 1830 to 1890.

459. Poetry and Prose of the Elizabethan Period (5). Fall. Pr., junior standing. Moore
A survey of the non-dramatic literature of the Elizabethan Period.

463. Eighteenth Century English Literature (5). Spring. Pr., junior standing. McCann
A survey of poetry and prose from Johnson through Blake.

481-2. English Novel (5-5). Fall, Winter. Pr., junior standing.
The first quarter provides a survey of the development of fiction from the Greek Romances down through the Renaissance and then concentrates on the great English novelists of the 18th Century. The second quarter provides a survey of the English novel from Jane Austin to Thomas Hardy.

491. American Poetry (5). Fall, alternate years. Pr., junior standing. Current-Garcia
A study of the major American poets from the Colonial period to 1920.

492. American Drama (5). Fall, alternate years. Pr., junior standing. Current-Garcia
A survey of American dramatic and stage history from Colonial times to the nineteenth century, with emphasis on developing tastes and techniques.

495. Southern Literature (5). Winter. Pr., junior standing. Current-Garcia
A study of the poetry, fiction, and non-fiction prose writings in the South from Revolutionary times to the present, with major emphasis centering on Southern regional attitudes and trends. Not open to students with credit in EH 365.

498-99. Readings for Honors (5-5). Pr., junior standing with a minimum 2.0 overall grade average and a 2.5 average in English courses; and consent of the English Department.
Individual reading programs in a specific period or phase of literature or language, as determined by the instructor and student. An honors essay and a written examination will be required.

GRADUATE COURSES

610. Introduction to Graduate Study (5). Fall, Winter. Woodall

611-12. Studies in the History and Interpretation of Literature (5-5). Summers only.

616-17. Studies in the American Language (5-5). Summers only.

620. The English Language, I: Old English (5). Fall. Gosser

621. The English Language, II: Middle and Modern English to 1500 (5). Pr., EH 620. Winter.

622. Linguistics (5). Spring 1964.

623. Beowulf (5). Pr., EH 620. Spring 1965. Gosser

625. Medieval Literature (5). Spring 1964. Moore

626. Chaucer (5). Winter. Moore

631. Elizabethan and Jacobean Drama (5). Winter 1965. Haines

632. Spenser (5). Spring 1964. Littleton

633. Studies in the Poetry and Prose of the English Renaissance (5). Spring 1965. Littleton

634. Poetry and Prose of the Seventeenth Century (5). Fall 1964.

635. Studies in Shakespeare (5). Spring 1965. Hoepfner

636. Milton (5). Spring 1964; Winter 1965.

640. Restoration and Eighteenth Century English Drama (5). Fall 1964.

641. Studies in the Age of Pope (5). Fall 1963; Winter 1965. McCann

642. Studies in the Age of Johnson (5). Winter 1964. McCann

650. Studies in English Romanticism (5). Fall 1963; Winter 1965. Breyer

652. Victorian Poetry (5). Spring 1965. Woodall

653. Victorian Prose (5). Fall 1964. Breyer

654. Studies in the Nineteenth Century English Novel (5). Spring 1964. Hudson

660. Modern Poetry (5). Winter 1965. Benson
661. Modern Fiction (5). Fall 1964. Rose
662. Studies in Twentieth Century Literature (5). Spring 1964; Fall 1964. Benson
670. American Literature of the Colonial and Revolutionary Periods (5). Spring 1964. Amacher
671. Studies in American Literature, 1800-1860 (5). Winter 1964. Current-Garcia
672. Studies in American Literature, 1860-1914 (5). Fall 1964. Patrick
673. Studies in the Literature of the South (5). Spring 1965. Current-Garcia
680. The History of Literary Criticism (5). Winter 1964. Amacher
681. The History of Literary Criticism (5). Spring 1965. Continuation of EH 680. Amacher
683. Studies in European Literature (5). Pr., Consent of instructor. Haines
684-85. Directed Individual Study (3-5). Staff
699. Research and Thesis (5). Staff
799. Research and Dissertation (5). Staff

Foreign Languages (FL)

Head Professor Skelton
Associate Professor Hamilton
Assistant Professors Helmke, Ikenberry, Warbington
Instructors Davis, Schaup*, Sanders, and Wolverton**

The Department of Foreign Languages offers elementary, intermediate, and advanced courses designed to acquaint the student with the structure of the language and to develop in him some facility in the actual use of the language through a combined conversational and reading approach. At an early level the student is introduced through the foreign language to the background, history, and the civilization of the speakers of that language. The upper levels are devoted to fostering an understanding and an appreciation of the respective literatures.

A minor in most cases involves the completion of FL 322, 332, or 352. A major in foreign languages requires the completion of seven courses above the one hundred level. These courses may be taken in two or more different languages. Students who contemplate working toward either a major or minor in Foreign Languages should consult with the Head Professor.

Students who have completed two or more years of a foreign language in high school should continue that language on the intermediate level. College credit is not granted for an elementary course when the student has pursued that language two years in high school.

French

121. Elementary French (5).
The aim of this course is to give the student the fundamentals of the French language together with as much simple reading as time will permit. Constant stress will be placed on oral and aural practice, with special emphasis on idiomatic expression.

122. Elementary French (5). Pr., FL 121 or equivalent.
A continuation of FL 121.

221. Intermediate French (5). Pr., FL 122 or equivalent.
Designed to acquaint the student with the background and the civilization of France and at the same time provide practice in reading current French. Special emphasis is placed on the acquisition of vocabulary and on oral practice.

222. Intermediate French (5). Pr., FL 221 or equivalent.
An introduction to French literature. Representative works of moderate difficulty and high literary value will be read. Oral practice will be continued.

321. Advanced French (5). Pr., FL 222 or equivalent.
Outstanding prose works, especially short stories and novels. Continued emphasis on vocabularly building and oral practice.

322. Advanced French (5). Pr., FL 222 or equivalent.
A continuation of FL 321, with a review of French grammar and practice in composition.

* Temporary.

421. Contemporary French Literature (5). Pr., FL 222 or equivalent.
Selected readings in the literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

422. Contemporary French Literature (5). Pr., FL 222 or equivalent.
A continuation of FL 421.

423. Survey of French Literature (5). Pr., FL 222 or equivalent.
A study of the development of French literature from the Chansons de geste through the classical period.

424. Survey of French Literature (5). Pr., FL 222 or equivalent.
A continuation of FL 423. The development of French literature from Romanticism to the modern period.

Spanish

131. Elementary Spanish I (5).
An introduction to the structure of the Spanish language, with practice in speaking, understanding, reading, and writing.

132. Elementary Spanish II (5). Pr., FL 131 or equivalent.
A continuation of FL 131.

231. Intermediate Spanish I (5). Pr., 132 or equivalent.
Designed to acquaint the student with the civilization of Spain while providing practice in reading and speaking.

232. Intermediate Spanish II (5). Pr., 231 or equivalent.
An introduction to Spanish literature. Representative works of outstanding Spanish writers will be examined.

331. Advanced Spanish I (5). Pr., FL 232 or equivalent.
Recognized works of Spanish and Spanish-American writers with a review of Spanish grammar and practice in composition.

332. Advanced Spanish II (5). Pr., FL 232 or equivalent.
A continuation of FL 331. Continued emphasis on vocabulary building and oral practice.

431. Contemporary Spanish Literature I (5). Pr., FL 232 or equivalent.
Selected readings in the literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

432. Contemporary Spanish Literature II (5). Pr., FL 232 or equivalent.
Selected readings in Spanish-American literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

433. Survey of Spanish Literature (5). Pr., FL 232 or equivalent.
A study of the development of Spanish literature from Poema del mio Cid through the Golden Age.

434. Survey of Spanish Literature (5). Pr., FL 232 or equivalent.
A continuation of FL 433. The development of Spanish Literature from the Decadencia to the contemporary period.

German

151. Elementary German I (5).
An introduction to the structure of the German language, with practice in speaking, understanding, reading, and writing.

152. Elementary German II (5). Pr., FL 151 or equivalent.
A continuation of FL 151.

251. Intermediate German I (5). Pr., FL 152 or equivalent.
Designed to provide the student with an understanding of the civilization of Germany while providing practice in reading and speaking the language.

252. Intermediate German II (5). Pr., FL 251 or equivalent.
An introduction to German literature. Representative works of various German authors will be studied.

351. Advanced German I (5). Pr., FL 252 or equivalent.
Recognized works of German writers, with a review of German grammar and practice in composition.

352. Advanced German (5). Pr., FL 252 or equivalent.
A continuation of FL 351. Continued emphasis on vocabulary building and oral practice.

451. Contemporary German Literature I (5). Pr., FL 252 or equivalent.
Selected readings in German literature of the nineteenth and twentieth centuries. Advanced practice in conversation.

452. Contemporary German Literature II (5). Pr., FL 252 or equivalent.
A continuation of 451.

453. Survey of German Literature (5). Pr., FL 252 or equivalent.
A study of the development of German literature from the beginnings through the Age of German Classicism (Schiller and Goethe).

454. Survey of German Literature (5). Pr., FL 252 or equivalent.
A continuation of FL 453. The development of German literature from the Age of Romanticism up to the present.

Italian

241. Elementary Italian I (5). Pr., Permission of the instructor.
An introduction to the structure of the Italian language, with parctice in speaking, understanding, reading, and writing.

242. Elementary Italian II (5). Pr., FL 241 or equivalent.
A continuation of FL 241.

341. Intermediate Italian I (5). Pr., FL 242 or equivalent.
An introduction to the civilization and the literature of Italy while providing practice in reading and speaking Italian.

Portuguese

261. Elementary Portuguese I (5). Pr., Permission of the instructor.
An introduction to the structure of the Brazilian language, with practice in speaking, understanding, reading, and writing.

262. Elementary Portuguese II (5). Pr., FL 261 or equivalent.
A continuation of FL 261.

361. Intermediate Portuguese I (5). Pr., FL 262 or equivalent.
An introduction to Brazilian civilization and Luso-Brazilian literature.

Russian

171. Elementary Russian I (5).
An introduction to the Russian language, with practice in reading, understanding, speaking, and writing.

172. Elementary Russian II (5). Pr., FL 171 or equivalent.
A continuation of FL 171.

271. Intermediate Russian I (5). Pr., FL 172 or equivalent.
An introduction to Russian civilization. Emphasis on acquisition of vocabulary and practice in reading.

Forestry (FY)*

Professors DeVall, Christen, Hodgkins, and Richards
Associate Professors Johnson and Posey
Assistant Professors Beals, DeBrunner, Larsen, and Steensen
Instructor White

101. Introduction to Forestry (3). Lec. 3. Fall, Winter.
An orientation course for freshmen students covering all subject matter fields in professional forestry as well as curriculum requirements and related academic relationships.

104. Forest Cartography (2). Lab. 6.
Introduction in the use of drafting instruments, engineering lettering, conventional map signs and symbols and application to planimetric and topographic maps, map design and grids.

105. Forestry Convocation (0). Fall, Winter, Spring.
A semi-quarterly forum required of all forestry students except in summer quarters. Visiting lecturers from all segments of federal, state, and private forestry will discuss topics of importance to the forest economy and interest to students.

201-2. Dendrology (3-3). Lec. 1, Lab. 6. Fall, Winter. Pr., BY 102, or permission of instructor. Coreq., FY 104 or EG 102.
A course dealing with the identification, taxonomic and ecological characteristics, and the distribution of important forest trees of the U.S.A. One quarter devoted to Angiosperms and one quarter to Gymnosperms.

203. Silvics (5). Lec. 3, Lab. 6. Spring. Pr., AY 305, BY 306, FY 202.
The influence of site factors on the reproduction, growth, development, and characteristics of forest vegetation and the effect of forest cover on the site. The classification of forest vegetation.

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* The prerequisites may be waived, by permission of the instructor concerned, for junior and senior students in other departments.

204. Forest Mensuration (5). Lec. 3, Lab. 6. Spring. Pr., FY 202, CE 201.
A course dealing with the methods and equipment used in measuring and computing the size, growth, and volume of trees and stands; units and volume of products; the preparation and use of volume and yield tables; principles of sampling as applied to timber estimates.

205. Wood Identification and Uses (5). Lec. 3, Lab. 6. Spring. Pr., FY 201 or FY 202.
Identification of the commercial woods of the United States by macroscopic features. Elementary wood anatomy, sufficient to permit an understanding of wood properties and why individual woods are suited to some uses and not to others. Introduction of the student to the major uses of wood. The basic principles of lumber grading.

206. Wood Measurements (3). Lec. 2, Lab. 3. Winter. Pr., MH 112.
A course in wood measurements oriented toward the needs of students in wood technology. Basic units of measure, log rules and their bases, and log scaling.

301. Silviculture (5). Lec. 3, Lab. 6. Fall. Pr., FY 101, FY 392.
Methods of cutting for reproduction and stand improvement. Methods of slash disposal; silvicultural plans.

302. Forest Fire Control (3). Lec. 2, Lab. 3. Winter. Pr., FY 101 and junior standing.
A course covering the important phases of forest fire protection, including organization, administration of the program, and detection and suppression of fires. Transportation, communications, and the operation, repair and maintenance of forest fire equipment. Public relations problems.

309. Sampling (3). Lec. 2, Lab. 3. Winter. Pr., MH 112 or consent of instructor.
Basic theory of sampling from finite and infinite populations. Probalistic concepts, including confidence limits and estimation of optimum, proportional, and equal sample sizes. Concepts of random, systematic, multistage, double, and other sampling designs and of stratification will be delineated.

310. Advanced Mensuration (3). Lec. 2, Lab. 3. Spring. Pr., FY 309, FY 390.
A study of forest growth and yield. Preparation and interpretation of stand, stock, and yield tables. Stand projection methods. Growth per cent.

311. Wood Technology I (5). Lec. 3, Lab. 6. Fall. Pr., FY 101 and one quarter of Dendrology.
Identification of commercial woods of industry by microscopic features. Basic microtechnique. Wood anatomy and properties.

313. Farm Forestry (5). Lec. 3, Lab. 4. Fall, Winter. Pr., sophomore standing.
(Not open to students in the degree Forestry curricula.) The place of farm forests in agricultural economy. The application of forestry principles to the problems of the farm woodland, especially as they relate to Alabama conditions.

315. Seeding and Planting (3). Lec. 2, Lab. 3. Spring. Pr., FY 101. Coreq., FY 301.
The theory and practice of seed collection, germination, seeding, and planting of forest trees in the nursery and in the field.

316. Forest Economics (3). Lec. 3. Winter. Pr., FY 101, AS 202, junior standing.
Fundamentals of economics as applied to the business of forestry. Supply, demand and price relationships and predictions for the future. Input-output relationship in production.

390. Field Mensuration (5). Lec. 1, Lab. 12. Summer. Pr., FY 101, FY 204.
Practical experience in timber cruising and field application of forest mensuration principles.

391. Forest Engineering (5). Lec. 1, Lab. 12. Summer. Pr., FY 101, CE 201.
Surveying and mapping forest properties.

392. Forest Ecology (3). Lec. 1, Lab. 6. Summer. Pr., FY 101, FY 203.
Field study of the biotic and edaphic factors that affect the growth and development of forest stands. A study of natural plant succession in the Piedmont of Alabama.

393. Alabama Forest Industries (3). Lec. 1, Lab. 6. Summer. Pr., FY 101.
Inspection and study of logging operations and primary manufacturing of forest products.

396. Forest Site Evaluation (2). Lec. 1, Lab. 3. Summer. Pr., FY 101, FY 203.
Field training in quantitative evaluation of the productivity of forest sites on the basis of soil properties.

402. Range and Game Management (5). Lec. 5. Spring. Pr., FY 392.
Principles of range and game management as applied to forest properties.

405. Lumber Grading (3). Lec. 2, Lab. 3. Fall.
The theory and practice of lumber grading, including hardwoods and softwoods; yard, structural and factory grades.

407. Forest Management (5). Lec. 5. Winter. Pr., FY 301, FY 316 and junior standing.
Organization and administration of forest properties; theory of working plans; regulation of cuts; cutting cycles and rotations.

408. Logging (3). Lec. 2, Lab. 3. Fall. Pr., FY 101. Coreq. FY 301.
A study of logging methods and the factors affecting the costs in each phase of logging. Field practice given in the safe use of mechanical logging equipment.

413. Microtechnique of Hard Materials (5). Lec. 1, Lab. 12. Fall. Pr., FY 311, or permission of instructor.
Preparation and sectioning of hard materials for microscopic study. Care and use of the sliding microtome and diamond saw, staining, counterstaining, and mounting of sections.

414. Regional Silviculture (3). Lec. 3. Fall. Pr., FY 301 and junior standing.
A study of the value, growth, stands, species, and problems of forestry in the South, especially Alabama, as compared to other states and regions.

417. Photogrammetry (5). Lec. 3, Lab. 6. Fall, Winter. Pr., FY 309, FY 390 and junior standing.
The use of aerial photographs in Forestry. Particular emphasis is placed on specifications for forestry photographs, basic map control, planimetric mapping, form-line mapping, timber type mapping and timber volume estimation.

418. Advanced Forest Management (3). Lec. 1, Lab. 6. Spring. Pr., FY 407 and junior standing.
Review of steps and procedures in preparation of management plans; preparation of management plans for selected areas.

421. Forest Research Methods (3). Lec. 2, Lab. 3. Spring. Pr., FY 309 and junior standing.
Review of statistical and sampling methods. Experimental design and analysis of data.

425. Wood Gluing and Lamination (5). Lec. 3, Lab. 6. Winter. Coreq., FY 311, Pr., PS 205 and junior standing.
Types and characteristics of woodworking glues. The theory, design, and manufacture of laminates and other glued products. The student will be introduced to research techniques and procedures by pursuing a specific study that will culminate in a comprehensive report.

427. Forest Valuation (5). Lec. 5. Fall. Pr., FY 204, FY 316 and junior standing.
Bases and methods of determining the value of stumpage and land. Calculation of taxes on and damages to a forest enterprise. Principles of insurance as applied to a forest enterprise. Computation of financial maturity of trees and stands.

429. Forest Tree Nursery Management (3). Lec. 2, Lab. 3. Spring. Pr., FY 315 and junior standing.
Principles and practices applicable to the operation of a commercial forest tree nursery. Soil Management techniques directly related to seedling quality will be stressed.

430. Wood Technology II (5). Lec. 3, Lab. 6. Fall. Pr., FY 311, CH 203, PS 205, and junior standing.
Physical and chemical nature of wood substances; wood-liquid relations, thermal and electrical properties, chemical processing of wood.

431. Wood Technology III (5). Lec. 3, Lab. 6. Spring. Pr., FY 311, PS 205, and junior standing.
Mechanical properties of wood, factors affecting the strength of wood, principles used in design of wood structures.

432. Seasoning and Preservation of Wood (5). Lec. 5. Winter. Pr., FY 311 and junior standing.
Principles and practices of seasoning and impregnation of wood, study of wood destroying agencies.

433. Seasoning and Preservation Laboratory (2). Lab. 6. Spring. Pr., FY 432 and junior standing.
Required for wood technology majors only. Laboratory study of techniques and equipment used in the seasoning and impregnation of wood.

434. Forest Policy (3). Lec. 3. Fall. Pr., FY 101 and junior standing.
Development of forest policy in the United States against the background of cultural heritages and national economic situations as causative factors. Some time is devoted to several basic considerations important in developing forest policy.

435. Forest Products Merchandising (5). Lec. 3, Lab. 6. Winter. Pr., FY 101, FY 204, junior standing.
Introduction of both round and sawn products on the forest products market serves as a basis for the course. Special emphasis is placed on relationships between stumpage value, production costs, and selling price of each product. Problems designed to demonstrate the effect of integrated merchandising of forest products are supplemented with sawmill demonstrations and field discussions.

440. Farm Forest Management I (3). Lec.-Dem. 4. Pr., graduate standing.
Field demonstrations to be arranged. Methods of measuring forest products and computing volumes and growth of trees and stands applicable to forest practice on farm woodlots. Methods of thinning, stand improvement, and harvesting, applicable to woodlot management.

450. Small Woodland Management (5). Summer. For majors in Education or Agricultural Education, by consent of instructor.
The importance of small forest holdings in the national, regional, and state economies. An evaluation of trends in ownership patterns and their related problems. Characteristics used in recognition of forest stands comprising major forest types. Principles of forest management and their application.

GRADUATE COURSES

601. Wood Chemistry (5). Lec. 2, Lab. 9. Spring. Pr., FY 430, CH 203. Richards
Detailed study of the physical and chemical nature of cellulose and modified cellulose and their derivatives. Study of the lignocellulose complex. The chemical analysis of wood.

602. Chemistry of Wood Glues, Finishes, and Impregnants (5). Lec. 3, Lab. 6. Spring. Pr., CH 208. Richards
The composition and characteristics of the synthetic resins used in glues and finishes. The chemical nature of the inorganic and organic chemicals used as fire retardants and preservatives. Testing methods.

603. Timber Physics (5). Lec. 3, Lab. 6. Winter. Pr., FY 431, MH 202. Staff
Use of the calculus in deriving the equation used in mechanics. Solution of simple differential equations of beams. Design of joists, trusses, and structures. Stress analysis by graphic and analytic methods. Relation of minute structure of wood to mechanical properties. Electrical and other non-mechanical properties of wood. Moisture relations in wood.

604-5. Preservative Evaluating Techniques (3-3). Lec. 1-1, Lab. 6-6. Fall, Winter. Pr., permission of instructor. Richards
Preparation and care of pure cultures of wood rotting fungi. Physiology of the fungi. Agar and wood block methods of preservative evaluation. Use of agar culture and soil cultures. Weight loss and strength loss as criteria of decay. Resistance to termites and marine borers. Planning service tests. Use of complex statistical design. Study of synergism in preservative mixtures.

606. Mechanics of Wood Cutting Tools (3). Lec. 2, Lab. 3. Fall. Staff
Study of the action of saw teeth, planer knives, cutterheads, and veneer knives and their shape and material of construction. Study of angle, depth, and rate of cutting and the resultant power consumption. Review of new developments in the field.

611. Advanced Forest Soils (5). Lec. 3, Lab. 6. Fall. Pr., AY 304 or AY 305. Hodgkins
Importance of morphological, physical and chemical properties of forest soils in relation to growth of trees. Classification of forest soils on the basis of productivity. Special emphasis on forest soils in the southern pine region.

612. Forest Influences (5). Lec. 4, Lab. 3. Winter. Pr., FY 203. Hodgkins
Effects resulting from the presence of forest or brush upon man, climate, soil productivity, erosion, soil water, runoff, stream flow and floods. Review of the field of forest hydrology.

614. Forest Land Valuation and Tenure (5). Lec. 5. Winter. Pr., FY 427. Christen
History of, and factors affecting forest land tenure in the United States. Advanced work in the valuation of forest land for purchase, tax assessment, and damage appraisal.

616. Advanced Forest Research Methods (5). Lec. 3, Lab. 6. Winter. Pr., FY 421 or permission of instructor. Posey
Role of experimental design in the field of forest research and the statistical analysis of data as aspects of scientific methods in forest research.

617. Forest Inventory (5). Lec. 4, Lab. 3. Winter. Pr., FY 417, FY 427. Becking
Design and analysis of large scale timber volume and growth appraisals, continuous forest inventory and use of electronic computing equipment in forest inventory operations.

640. Farm Forest Management II (3). Lec. 4. Pr., FY 440 and graduate standing. Staff
Organization of the farm woodlot for continuous forest production. Methods of balancing cut and drain, and plans for the efficient administration of the woodlot as a business.

690. Forestry Seminar (3). Spring. Staff
Advanced study of current literature and recent developments, with written and verbal reports on selected problems.

695. Special Problems (3 to 8 hrs.) All quarters. Staff
Study of a special problem in forestry or wood utilization. Such a problem will be of lesser magnitude than a thesis but will test the student's ability to do thorough library research as well as any needed laboratory or field work, and to prepare a comprehensive report on his findings. The work may be spread over more than one quarter, but shall be limited to a total of eight quarter hours.

699. Research and Thesis. Credit to be arranged. Staff

Health, Physical Education and Recreation (PE)

Head Professor Fourier
Professors Land, Lapp and Umbach
Associate Professors Evans, Fitzpatrick, and Young
Assistant Professors Dragoin, Lawler, Martincic, Rosen, Turner and Walton
Instructors Carlisle, Jackson, Lurie, Lynn, Price, Rawls, Reid, Taube, Tomlin, Waldrop and Washington

1. Physical Education is required for six consecutive quarters. Only one credit per quarter is permitted or transferable to meet the six-quarter requirement.

2. Unless otherwise approved by the student's Dean, each student who lacks physical education must register for physical education in the first and succeeding quarters of residence until all physical education requirements are met.

3. All undergraduates under 26 years of age must take physical education until requirements are met.

4. One quarter hour credit is assigned for each quarter (maximum of 6 quarter hours in activity courses allowed on degree). No duplication of course is permitted except in varsity sports.

5. Students transferring from an institution not requiring physical education will have their physical education requirements reduced by the number of full-time quarters (15 hrs. credit per quarter) in residence at the former institution. Students who transfer from an institution requiring physical education will have their physical education requirements reduced by the number of quarters of physical education completed at the former institution. Students who have not fulfilled the requirements in physical education at their previous institution will be required to do so at Auburn University before graduation.

6. Students who have had active military service may receive credit in physical education as follows: for less than 6 months, no credit; for 6 months to one year, 1 quarter hour in PE 100, Basic Physical Education; for more than one year, 6 quarter hours.

7. A medical examination is required of all students before being admitted into activity classes. A card stating the physical condition of each student must be filed in the Infirmary and the Department of Health, Physical Education and Recreation before assignment of activities can be approved.

Students are classified according to the results of the medical examinations and the recommendation of the college physician into classifications "A," "B" or "C."

"A"—This classification permits the student to engage in any activity offered by the department.

"B"—This classification provides for students with physical limitations which may restrict their participation in the regular program of activities.

"C"—This classification provides for the student not classified as "A" or "B."

8. Each student is required to dress in the regulation gymnasium costume in order to participate in class work.

9. A well-rounded program of activities is offered and students are urged to register in a variety of activities.

Men—Students entering college as first quarter freshmen with an "A" health classification are required to take PE 100. Students who are placed in a "B" health classification may be required to take PE 100, depending upon their physical disabilities.

Women—Students with an "A" and "B" health classification may be assigned according to skill and ability into elementary, intermediate and advanced classes.

Students' participation in the Intramural Sports Program is regulated by their health classification. All students in scheduled Intramural Sports activities must have a health classification card on file in the office, Department of Health, Physical Education and Recreation, before participation is allowed.

10. Activity program planning:

Men—In order to receive a well-rounded program of activities, students are required to pass one course in each of the following areas: Basic Physical Education, Team Sports or Rhythms, Individual Sports, Gymnastic Sports, Aquatic Sports, and Combative Sports. They are permitted a choice of one sport in each of these areas.

Women—Swimming is the only required activity. Each student is urged to plan a variety of activities.

11. Skills courses carrying 1 credit listed under Professional Courses for Undergraduates Majoring and/or Minoring in Physical Education may be used, with departmental approval, to meet all or part of the six-quarter general requirement in physical education.

12. Hygiene 110 may be taken for 3 credits in lieu of Hygiene courses 111, 112, and 113 with the approval of the student's dean.

Activities (PE)

Course No.

100 ..... Basic Physical Education
102 ..... Sports Education

Aquatics

120 ..... Beginning Swimming
220 ..... Intermediate Swimming
320 ..... Life Saving & Water Safety

Combative Sports

130 ..... Boxing
131 ..... Fencing
132 ..... Wrestling

Gymnastics Sports

140 ..... Apparatus
141 ..... Trampoline
142-143-243 ..... Tumbling

Individual Sports

150 ..... Angling
151-152-252 ..... Archery
153-154-254 ..... Badminton
155-156-256 ..... Bowling
157-158-258 ..... Golf
159 ..... Mass Games & Relays
160-161-261 ..... Recreational Sports
162 ..... *Rifle Marksmanship
163-164-264 ..... Tennis

Course No.

165 ..... Track
166 ..... Weight Training

Rhythms

170-171-271 ..... Folk Dance
172-173-273 ..... Modern Dance
174-175-275 ..... Tap Dance
176-177-277 ..... Social Dance

Team Sports

180-181-281 ..... Basketball
182-183-283 ..... Soccer
184-185-285 ..... Softball
186 ..... Speedball
187 ..... Touch Football
188-189-289 ..... Volleyball

Varsity Sports

322 ..... Swimming
332 ..... Wrestling
357 ..... Golf
363 ..... Tennis
365 ..... Track
366 ..... Cross Country
380 ..... Basketball
384 ..... Baseball
387 ..... Football

110. Hygiene (3). Summer, Fall, Winter. Staff
Hygiene; deals with problems in personal, mental and environmental Hygiene.

111-112-113. Hygiene (1-1-1). Spring, Summer, Fall, Winter. Staff
Required of all freshman women for three quarters. PE 111 deals with problems in personal hygiene; PE 112, mental hygiene, suggesting certain principles for working out individual difficulties; and PE 113, environmental hygiene; a consideration of the sociological environment and public health education.

Professional Courses for Undergraduates Majoring and Minoring in Physical Education

101. Survey of Activities (Men) (1). Staff
Leadership course in teaching calisthenics, grass drills, guerillas, and the organization of class activity. (Required of majors and minors.)

133. Survey of Activities (Men) (1). Staff
The fundamental skills and techniques of elementary combatives, boxing and fencing.

167. Survey of Activities (Men) (1). Staff
The fundamental skills and techniques of badminton, paddle tennis, and tennis.

190. Volleyball and Tumbling (Women) (1). Fall. Staff
Basic skills in volleyball and tumbling.

191. Basketball and Recreation Sports (Women) (1). Winter. Staff
Basic skills in basketball and recreation sports.

192. Softball and Tennis (Women) (1). Spring. Staff
Basic skills of softball and tennis.

201. Introduction to Physical Education (5). Lec. 5. Fall, Spring. Pr., sophomore standing. Fitzpatrick, Fourier
An introduction to the field of physical education from the earliest periods to the present. Emphasis is placed on the physical, biological and psychological principles of physical education.

202. Basketball (Men) (5). Lec. 3, Lab. 4. Fall. Eaves
The fundamental skill techniques of basketball—offense, defense and strategy.

* Open to students in Air, Army and Navy ROTC.

203. Anatomy (Men) (5). Lec. 5. Fall. Staff
The study of structure and functions of the human body, including digestive, circulatory, respiratory, reproductive, nervous, excretory, and endocrine systems.

206. Football (Men) (5). Winter. Jordan
The fundamentals of football and the different types of offense, defense, team strategy and generalship.

212. Elementary Physical Education (5). Lec. 5. Fall, Winter, Summer. Pr., PE 190, 278 (Women); PE 278 (Men). (Majors).
A study of games of low organization and play activities suitable to each grade of elementary level. The presentation of skills and devices necessary for competent instruction for the elementary grades.

214. Kinesiology (5). Lec. 5. Pr., VM 220-21 or PE 203, VM 210. Staff

220. Intermediate Swimming (1). Staff
Skills and techniques of swimming and water safety.

244. Survey of Activities (Men) (1). Staff
Fundamental skills and techniques of tumbling, trampoline, and pyramids.

268. Survey of Activities (Men) (1). Staff
The teaching of the fundamental skills and techniques of archery, golf, and weight training.

278. Folk and Square Dance (1). Staff
Basic skills of folk and square dance.

301. Recreation Leadership (5). Lec. 5. Winter, Summer. Pr., PE 278, 377 (Women); PE 278, 376 (Men); PE 212 (Women and Men). (Majors). Staff

303. Baseball (Men) (2). Lec. 1, Lab. 2. Staff
The study of offensive and defensive strategy, pitching, catching, infielding, outfielding, batting and baserunning.

304. Track and Field (Men) (3). Lec. 2, Lab. 2. Staff
Fundamental skills and techniques of track and field athletics. The organizing and conducting of track meets.

311. Conduct of Rhythmical Activities (Women) (5). Lab. 10. Spring. Pr., PE 278, 377, 373. Turner
Discussions, practices, and leadership experiences in folk, square, tap, social, and modern dance.

312. Theory and Conduct of Sports (Women) (5). Lab. 10. Fall. Pr., PE 184. Fitzpatrick
A study of leadup games, skill techniques, rules and principles of officiating; practice in the application of the skills and principles of volleyball and tumbling.

313. Theory and Conduct of Sports (Women) (5). Lab. 10. Winter. Pr., PE 191, 367, 368. Lawler
A study of leadup games, skill techniques, rules and principles of officiating; practice in the application of the skills and principles of basketball and recreation sports.

314. Theory and Conduct of Sports (Women) (5). Lab. 10. Spring. Pr., PE 192. Staff
A study of leadup games; skill techniques, rules and principles of officiating; practice in the application of the skills and principles of softball and tennis.

320. Life Saving and Water Safety (1). Staff
Life saving techniques leading to senior or instructor's certificate. Water safety, officiating and administration of water demonstrations and programs.

352. Survey of Activities (Men) (1). Lab. 6. Fall. Staff
The fundamental skills and techniques of apparatus.

353. Survey of Activities (Men) (1). Lab. 6. Staff
The teaching of fundamental skills and techniques of team games, such as volleyball, soccer, and speedball.

367. Badminton and Bowling (Women) (1). Staff
Skills and techniques of badminton and bowling.

368. Golf and Archery (Women) (1). Staff
Skills and techniques of golf and archery.

373. Modern Dance (Women) (1). Staff
Skills and techniques of modern dance.

376. Survey of Activities (Men) (1). Lab. 6. Staff
The fundamental skills and techniques of square, social, and folk dance.

377. Social and Tap Dance (Women) (1). Staff
Basic skills of social and tap dance.

383. Soccer and Calisthenics (Women) (1). Staff
Basic skills of soccer and calisthenics.

401. Organization and Administration (5). Lec. 5. Fall and Spring. Pr., senior standing. Land, Umbach
Administration of intramural and physical education activities; also the construction and care of the physical education plant and departmental organization.

404. Athletic Injuries and First Aid (Men) (5). Lec. 4, Lab. 2. Howard
A study of athletic injuries as to their care, prevention, and correction. Developing the knowledge, skills, and techniques of first aid leading to an Instructor's rating in First Aid.

416. Adaptive Physical Education (5). Lec. 5. Spring. Pr., PE 214, VM 220 and 221 (Women); PE 214, 203, 404 (Men). Martincic
A review of anatomy, physiology, and psychology as pertains to special programs of physical education for the temporarily and permanently handicapped, with laboratory practice in posture training and remedial gymnastics.

432. Survey of Activities (Men) (1). Staff
Fundamental skills and techniques of wrestling.

For description of the following education (ED) courses in health, physical education and recreation, see page 196.

Undergraduate: ED 201 (F); ED 201 (L); ED 414 (C); ED 423 (C); ED 425 (C); ED 249.
Advanced Undergraduate and Graduate: ED 409.
Graduate: ED 619, ED 626, ED 651 (F), ED 652 (F), ED 653 (F), ED 654 (F), ED 669.

History and Political Science (HY)

Head Professor Reynolds
Professors Partin and Rea
Research Professor McMillan
Associate Professors Ivey, Johnson, Kendrick, Larson
Assistant Professors Belser, McNorton, Metzger, Naylor, Owsley, Reagan, and Williamson
Instructors Roberson, Atkins

In addition to the regulations governing the major in the School of Science and Literature as stated on page 140, these additional requirements apply to the History major.

The major will include HY 311 Medieval History, 5 quarter hours; HY 312 Modern European History, 5 quarter hours; HY 313 Recent European History, 5 quarter hours; and as a required elective either PA 410, PA 420, PA 430, or PA 440 (total 5 quarter hours).

101. History of the United States (5).
A study of the history of our country to 1865. Required of majors and minors in the Social Sciences in the School of Education.

102. History of the United States (5).
A study of the history of our country since 1865. Required of majors and minors in the Social Sciences in the School of Education.

105-205-305-405. Current Events (1).
A study of the events of the world today based on current periodicals.

107. United States History (5).
This is a general survey of American History covering important phases from the period of discovery and colonization to the present. Credit for this course excludes credit for HY 101 or 102.

204. History of the Modern World (3). General elective. (Credit in History 208, 312, and 313 excludes credit for this course.)
A brief survey of major periods of modern history and the factors contributing to the modern world civilization. Primarily intended for students in Engineering curricula.

206. United States Government (5). Pr., sophomore standing. (Credit in HY 209 excludes credit for this course.)
A survey course in national, state, and local government.

207. World History (5). Pr., sophomore standing.
This course gives a survey of the leading events in World History from ancient times to 1648.

208. World History (5). Pr., sophomore standing.
This course gives a survey of the leading events in World History from 1648 to the present.

209. National Government (5). Pr., sophomore standing. (Credit in HY 206 excludes credit for this course.)
Is an advanced course in nature, theory and practice of national government in the United States.

210. State Government (5). Pr., sophomore standing.
This is an advanced course in the nature, theory and practice of state and municipal government of the United States with emphasis on Alabama government.

311. Medieval History (5). Pr., junior standing.
Primarily a history of Europe from the fall of the Roman Empire to the Age of Discovery.

312. Modern European History (5). Pr., junior standing.
A history of Europe from the Age of Discovery to 1815.

313. Recent European History (5). Pr., junior standing.
A history of Europe since 1815, with especial emphasis on the period since World War I.

314. United States Colonial History (3). General elective. Pr., junior standing.
A survey of the political, economic and social history of the colonies from their founding through the American Revolution.

315. International Organization (3). General elective. Pr., junior standing.
This course traces the evolution of international organization from the beginning through the United Nations.

322. The United States in World Affairs (3). General elective. Pr., junior standing.
A brief survey of the influence which the United States has exerted in international affairs. (Excludes credit for HY 421.)

371. History of the West (3). General elective. Pr., junior standing.
A brief history of the development of the West and of its influence on American history.

403. The Age of Jefferson and Jackson (5). Pr., junior standing.
A study of United States history from the establishment of the government under the Constitution through the Compromise of 1850.

404. Recent United States History (5). Pr., junior standing.
A study of United States history since 1900.

406. The Civil War and Reconstruction (5). Pr., junior standing.
A study of the political, economic, social, and military aspects of the period covered.

407. Political Science (5). Pr., HY 206 or 209 and junior standing.
A systematic study of the nature, scope, and methods of political science; the origin, forms, and functions of the state, with special emphasis on the development of political theory.

408. United States Political Parties (5). Pr., junior standing.
A study of the development of political parties, their policies and influence in United States history.

409. Constitutional History of the United States (5). Pr., junior standing.
A survey of the origins and development of the Constitution of the United States.

410. Political Theory (5). Pr., junior standing.
A history of political thought from ancient times to the present.

411. Local Government (5). Pr., junior standing.
A study of county, city, and town government, with particular emphasis on their operation in Alabama.

412. World Politics (5). Pr., junior standing.
A study of the methods, motives and reasons governing the political and international relations between the nations of the world, including the effect of the political and economic systems on these relations.

413. Public Administration (5). Pr., HY 206 or HY 209 and junior standing.
A study of the theory and practice of organizing and administering the institutions of government, with particular attention to the problems of reorganization of departmental structure, the civil service, and related personnel matters, and the role of personal relations and partisan politics in administration.

414. Comparative Government (5). Pr., HY 206 or HY 209 and junior standing.
A comparative study of the governments of other nations, with emphasis on the contrast between the parliamentary system as exemplified in the governments of Great Britain, France, other Western European nations, and Canada, and the presidential system of the United States.

420. History of Russia (5). Pr., junior standing.
A survey study of the history of the Russian people from early times to the present. Particular emphasis is laid on present domestic institutions and foreign policy.

421. A History of U.S. Diplomacy (5). Pr., HY 107 and junior standing.
A history of the chief events in our relations with foreign powers from the Revolutionary War to the present, and a study of the organization and working of our diplomatic machinery. (Excludes credit for HY 322.)

451. The Far East (5). Pr., junior standing.
A brief history of the development of the civilizations of the Far East from early times to the present. Emphasis is placed on internal affairs and institutions.

452. History of Latin America (5). Pr., junior standing.
A study of the political, social and economic history of the Latin American States with emphasis on the inter-relations with the United States.

460. Great Leaders of History (5). Pr., junior standing.
A study of some world leaders and their relationship to the great movements of history.

472. History of England (5). Pr., junior standing.
A brief history of the political, economic and social development of England.

481. History of Alabama (5). Pr., junior standing.
A brief history of Alabama from the beginning to the present.

482. History of the South (5). Pr., junior standing.
A survey of the political, economic and social development of the South from colonial times to the present.

GRADUATE COURSES

625. United States Domestic Policy to 1865 (5).
626. United States Domestic Policy Since 1865 (5).
627. United States Foreign Policy to 1865 (5).
628. United States Foreign Policy Since 1865 (5).
629. Historical Methods (5).
630. The Old South (5).
631. The New South (5).
632. Historical Laboratory: A Documentary History of the United States (5).
633. English and European History (5).
699. Research and Thesis (5).

Home Economics (HE)

Dean Spidle
Professors Rose and Tyer
Associate Professors Spencer, Van de Mark, Ritchie, Arnold and Douty
Assistant Professors Layfield, Bliss, Cannon, Prather, Morrill, Rush, Noble, Morton, and White
Instructors Lorendo and Turner

Professional Courses

100. Freshman Problems (3). Lec. 3. Summer, Fall. Spidle, Morrill
An orientation course required of all Home Economic majors with special emphasis on "how to study" and problems confronting freshman students.

104. Related Art (5). Lec. 2, Lab. 6. Each quarter. Lorendo
A study of related elementary art and design. Emphasis is placed on the application of art study to the home.

301. Audio-Visual Education in Home Economics (3). Lec. 3. Pr., junior standing in Home Economics. Arnold
A study of the use and development of illustrative and demonstration materials in the fields of interest to home economists.

304. Home and Family Life (3). Lec. 3. General elective. Each quarter. Layfield
A study of the relationships of family members, economic and social problems at all age levels, and development tasks of individuals. Open to men and women.

306. Personal Grooming (3). General elective. All quarters. Arnold
Good grooming and its contributing factors.

401. Extension Organization and Methods (5). Winter, Summer. Morrill
Program planning, methods of communications used by extension and public utilities including history and organization.

421. An Evaluation of the Major Field (5). Pr., junior standing. Spidle, Staff
An evaluation of the possibilities of the major field and the working techniques involved in some of the positions available.

431. Senior Seminar (3). Fall and Spring. Pr., senior standing and a major in Home Economics. Rose
A senior course required for all Home Economics majors. Survey and discussion of recent studies on opportunities and responsibilities for careers in Home Economics; analysis of characteristics, abilities, and skills necessary for success.

GRADUATE COURSES IN HOME ECONOMICS

The School of Home Economics offers major work leading to a Master's degree in Clothing and Textiles, Food and Nutrition, Family Life and Nursery Education, and Home Management. The student may elect either the Master of Science or the Master of Home Economics degree, except in the fields of Nutrition and Textiles in which a thesis is required.

To qualify for graduate study, the student must have a Bachelor's degree from a recognized college or university, and sufficient background to assure high quality work on the graduate level. The graduate catalog should be consulted for further information.

GRADUATE COURSES FOR ALL MAJORS

Professors Spidle, Rose, and Tyer
Associate Professors Spencer, Van de Mark, Arnold and Douty
Assistant Professors Prather, Morrill, White and Morton

421. An Evaluation in the Major Field (5). Spidle, Staff
(See description carried in undergraduate listing.)

601-2. Seminar in Home Economics (5-5). Staff
Students make reports on the recent literature in the field of home economics. Seminar may be taken in any department: child development, clothing and textiles, foods and nutrition, or home management.

603-4. Administration in Home Economics (5-5). Spidle
A study of administrative policies and procedures dealing with staff, personnel, curricula, student guidance, current trends, new legislation in education, budget implications, and program evaluation. This study is developed through lectures, group discussions, visitations to educational projects, and by visiting administrators.

605. Methods of Research in Home Economics (3). Douty, Prather, Rose
A study of research and investigation methods applicable to the various areas of Home Economics.

609. Research Studies in Home Economics (2-5). Staff
Independent, advanced work on an approved project under the supervision of a professor in the student's chosen field of study.

651. Audio-Visual Aids in Home Economics (5). Staff
This course is designed to aid home economists in analyzing, evaluating, organizing, and accumulating illustrative materials.

699. Research and Thesis. Credit to be arranged. Spidle, Staff
Required of all students under the Thesis Option in any field.

Clothing and Textiles

Associate Professors Spencer, Arnold and Douty
Assistant Professor Morton
Instructor Lorendo

105. Fundamentals of Clothing (5). Lec. 2, Lab. 8. Arnold
Selection of design and fabric; cutting; fitting and construction of garments for personal use.

205. Clothing for the Family (5). Lec. 3, Lab. 6. Each quarter. Pr., HE 105 or equivalent. Arnold
A study of the economics of clothing for the statistical family group. Suitable garments are planned and made for members of the family.

215. Clothing Design (5). Lec. 2, Lab. 6. Fall, Spring. Pr., HE 104, 105. Lorendo
A study of color, line, form and texture as a basis for designing apparel.

305. Tailoring (3). Lab. 9. Winter, Summer. Pr., HE 205, junior standing. Arnold
Consists of selection of fabric and tailoring of a suit or coat.

315. Textiles (5). Lec. 3, Lab. 4. Fall. Pr., CH 103, 104. Morton
The principal aim of the course is the development of sound judgment in the selection of textiles for personal and household use.

325. Fundamentals of Retailing (5). Winter. Pr., EC 200, junior standing. Arnold
A study of the practices and policies of retail stores.

335. Retail Training (8). Fall. Pr., HE 325. Arnold
Three months practical experience with pay in large department store. Students are given formal instruction and supervision. Scheduled only by pre-arrangement.

345. Creative Crafts (1-2-3). Lab. 9. General Elective. Each quarter. Arnold, Lorendo
A study of design and execution of creative crafts; viz., metal work, leatherwork, ceramics, weaving, fabric decoration.

355. Consumer Textiles (3). Lec. 3. General elective. Fall, Winter, Spring. Douty
A study of textile fabrics, finishes, and trade practices with special emphasis on consumer problems.

405. Creative Costume Design (5). Lec. 2, Lab. 9. Spring. Pr., junior standing, HE 215, and two quarters of clothing construction. Arnold
Consists of making dress forms, designing, draping and executing original designs. Designers and their methods are studied.

415. History of Textiles (5). Lec. 5. Pr., Elementary art and junior standing. Spencer
A study is made of the development of the textile industry and of fabric design from the earliest times to the present day.

425. History of Costume (5). Lec. 5. Pr., Elementary art and junior standing. Spencer
A study of the outstanding historic modes in dress for men and women from early times to the present day.

435. Textile Testing (5). Lec. 2, Lab. 6. Winter. Pr., HE 315. Morton
Testing household and apparel textiles with standard textile testing equipment according to A.S.T.M. methods, and the application of data found to better consumer understanding and practices.

GRADUATE COURSES

650. Flat Pattern Designing (5). Pr., 15 quarter hours undergraduate clothing. Douty
A study of commercial methods of pattern making. Developing a foundation pattern from which to design and cut garments. Attention is given to variations from the norm of human body measurements and to the need for further research in designing for various age groups.

652. Clothing and Textiles Literature (5). Spencer, Douty
A study of written material in the field of Clothing and Textiles with special emphasis on current periodicals, pamphlets, and reports of recent research. Required of all candidates for the master's degree in Clothing and Textiles.

653. Economics of Clothing Consumption (5). Pr., EC 200, HE 205. Spencer
A critical examination of the literature on Clothing and Textiles economics, modern trends in manufacture and distribution and labor laws and their influence on clothing.

654. Special Problems in Clothing Economics (5). Pr., HE 653. Spencer, Douty
A study of individual family problems relating to the economics of clothing and textiles, with practical application to the present day consumer.

655. Problems in Home Decoration (5). Spencer
The undergraduate course, HE 313, is used as a basis for advanced work along the same lines. Problems in valuing choice of materials and arrangements of exteriors as well as interiors of the home are made the topic of minor research.

656. Speed Techniques in Clothing Construction (5). Pr., 10 quarter hours undergraduate clothing. Douty
A study of recent trends toward rapid construction and of the problems and possibilities of bringing commercial methods into the home or classroom. Minor research in newer methods of clothing construction.

657. Detergency and Cotton Textiles (5). Pr., HE 315 or equivalent. Morton
A study of the chemical relation of detergents, water, bleach, and mechanical action to cotton fibers (cellulose).

658. Chemical and Physical Analysis of Textiles (5). Pr., HE 315 or equivalent. Morton
The study and application of the theory of A.S.T.M., A.A.T.C.C., and other standardized procedures.

Family Life and Early Childhood Education

Professor Tyer
Assistant Professors Layfield, Bliss, and Morrill
Instructor Turner

207. Introductory Child Development (3). Lec. 2, Lab. 2. Fall, Winter, Spring. Pr., SY 201. Tyer, Morrill
Emphasis will be placed on prenatal development, maternal and infant care.

407. Growth and Development of Children (5). Lec. 3, Lab. 6. Pr., PG 211, SY 201. Layfield, Bliss, Turner
A study of the mental, physical, social and emotional growth and development of children with emphasis on the early years. Students observe and participate in the care of children in the nursery school and kindergarten.

417. Guidance of Children (5). Lec. 3, Lab. 6. Pr., HE 407, and junior standing. Layfield, Bliss, Turner
A study of the environmental factors affecting the development of children in the home and community. Emphasis is given to principles and methods of guidance. Students participate in the guidance of the children in both the nursery school and kindergarten.

437. Special Problems in Child Development Nursery School and Kindergarten Education (5). Lec. 3, Lab. to be arranged. Pr., junior standing. Layfield
A detailed study of the organization and management of a nursery school and kindergarten, including selection of equipment. Special units of work will be given in reading and story telling, nature, music, art, and construction of play materials for children.

447. Nursery School and Kindergarten Procedures (5). Lec. 2, Lab. 9. Pr., junior standing and HE 437. Tyer, Layfield
An advanced course for majors in Nursery School and Kindergarten Education. The student will spend the equivalent of three mornings in the laboratory each week with increased responsibility for the guidance of children under supervision of the staff.

457. Family Relationships (5). Fall, Winter, Spring. Pr., HE 207, HE 407, senior standing. Tyer
A study of interpersonal relationships among family members, with attention to human development, training and guidance of children.

GRADUATE COURSES

670. Personality Development (5). Tyer
A general study of personality and the factors which influence development.

672. Parent Education (5). Lec. 3, Lab. 4. Pr., HE 407. Layfield
Group and individual conferences with parents.

675. Pre-School Guidance (5). Lec. 3, Lab. 4-6. Pr., HE 407. Layfield
An application of methods and techniques of guidance in laboratory groups of pre-school children.

676. The Family and Its Relationships (5). Tyer, Layfield, Morrill
Intensive study of the family and its effect upon personality development.

677. Readings in Family Life and Child Development (5). Layfield, Spidle
Study and evaluation of current literature and research concerning the pre-school child; the school-age child; the adolescent; the young adult; problems of later maturity; changing family patterns.

678. Advanced Child Development (5). Pr., HE 407. Layfield, Tyer
An intensive and extensive study of growth and development of children with emphasis upon environmental and developmental factors affecting growth and development and implications for guidance. Laboratory experiences where needed.

Foods and Nutrition

Associate Professors Van de Mark and Ritchie
Assistant Professors White, Rush, Cannon, and Prather

102. Basic Foods and Nutrition (5). Lec. 3, Lab. 4. Each quarter. Ritchie, White, Cannon
Elements of nutrition and principles underlying the fundamental processes and standards of food preparation.

202. Meal Management (5). Lec. 3, Lab. 6. Each quarter. Pr., HE 102. Ritchie, White
The planning of meals with emphasis on scientific principles of nutrition, aesthetic value, management of time and the food budget on various economic levels.

302. Table Service (3). Lec. 3. General elective. Each quarter. Ritchie
A study is made of the accessories used for table service in their relation to each other and to the complete service of meals. Principles of flower arrangements are studied and forms of the different food services in the home.

312. Food Science (5). Lec. 4, Lab. 3. Pr., CH 203. Prather
A study of the chemistry of carbohydrates, fats, proteins, vitamins and minerals applied to human nutrition.

322. Food Preservation (3). Lec. 1, Lab. 6. Fall and Summer. Pr., VM 311 (Bact.). Ritchie
The course consists of the study of the theory and practice of preservation of foods by fermentation, crystallization, canning and freezing with special emphasis placed in better quality of foods preserved at home.

332. Nutrition and Dietetics I (5). Lec. 3, Lab. 4. Fall. Pr., CH 204, VM 210. Prather
A study and application of the various factors in influencing the body's need for food. A course for majors in Nutrition or Nursing Science.

342. **Nutrition and Dietetics II (5). Lec. 3, Lab. 4. Winter. Pr., HE 332.** Prather
A continuation of HE 332.

352. **Institutional Organization (3). Lec. 3. Winter, Summer.** Van de Mark, Rush
The organization and administration work in residence halls, clubs, lunch rooms, tea rooms, hotels and hospitals. Study of physical equipment, personnel, ethics, marketing conditions, food purchases, records and accounts. Required field trips to residence halls, hospitals, etc., for observation.

362. **Problems in Community Nutrition (3). Pr., HE 342, or HE 372.** Ritchie, Cannon, White
Study of the methods of presenting nutrition information or organizations engaged in community work. Field experience.

372. **Nutrition and Health (3). Lec. 3. General elective. Each quarter.** Van de Mark, White
A study and application of the fundamentals of human nutrition. Food requirements of different age levels and selection of food at different cost levels are considered. Open to all students except Nutrition or Nursing Science majors.

402. **Diet Therapy (5). Lec. 3, Lab. 4. Spring. Pr., junior standing, HE 332, and HE 342.** Ritchie
The application of principles of nutrition to various periods of stress and as a therapeutic aid in treatment of disease.

412. **Large Quantity Cookery (5). Lec. 3, Lab. 6. Fall. Pr., junior standing and HE 202.** Van de Mark, Rush
Institutional menu planning, food buying, preparation and serving of foods. Use, operation and maintenance of equipment. University kitchens are used for the laboratory experience.

432. **Cafeteria Management (5). Lec. 3, Lab. 6. Pr., junior standing and HE 352.** Van de Mark, Rush
A study is made of layouts, personnel management, foods and equipment applicable to cafeterias. Course also includes administrative problems, records, portion and cost controls. (Field trips.)

442. **Catering (3). Lec. 1, Lab. 6. Spring. Pr., HE 202.** Ritchie
Advanced food preparation is studied in relation to needs in field of catering. This applies to clubs, hotels and other institutions such as colleges. Problems studied include proper decoration, settings and table accessories.

452. **Food for the Young Child (5). Lec. 2, Lab. 9. Pr., HE 102 and 202.** Ritchie
A study is made of the food and its preparation for feeding during the pre-natal period and feeding the infant after birth—through the preschool years. The college nursery school serves as a laboratory for this course.

462. **Experimental Cookery (5). Lec. 2, Lab. 6. Pr., junior standing, HE 202, and CH 203.** Van de Mark
This course is based on a study of causes and effects of various methods of food preparation. It includes basic chemical reactions involved in food combinations. The course gives a foundation for work in food research.

472. **Community Nutrition (5). Pr., junior standing and HE 372 or HE 332 or HE 342.** White, Ritchie
A study of problems involved in improvement of nutrition practices in the community, as it applies to high school teaching and Extension Service programs.

492. **Infant and Child Nutrition (5). Pr., junior standing and HE 372 or HE 332 and HE 342.** Ritchie
Nutrition requirements for growth from prenatal life through adolescence.

GRADUATE COURSES

620. **Experimental Cookery (5). Pr., or corequisite, CH 304.** Van de Mark
Food preparation from the experimental standpoint giving instruction in techniques used in measuring quality of food. This course gives a foundation in advanced food research.

621. **Advanced Foods (5). Pr., HE 202 and HE 462.** Van de Mark
Chemical and physical changes of importance in food preparation and processing.

622. **Problems in Food Preservation (5). Pr., VM 311 and HE 332.** Prather
Various problems which grow out of advanced study of preservation of foods. These problems are subjects for minor research.

623. **Readings in Food or Nutrition (5). Pr., HE 372, 332, CH 203.** Van de Mark
A critical survey of current literature in nutrition and food consumption.

624. **Advanced Nutrition I (5). Pr., HE 332, HE 342, CH 203, CH 208.** Prather
A study of carbohydrates, fats, proteins and the minerals.

625. **Advanced Nutrition II (5). Pr., HE 332, CH 207, CH 208.** Prather
A study of the vitamins and their interrelationships.

628. **Research Methods in Nutrition (5).** Van de Mark, Prather
Special problems in human nutrition.

Home Management and Family Economics

Professor Rose
Assistant Professors Morrill and Noble

233. Home Equipment (5). Lec. 2, Lab. 6. Fall, Spring. Morrill
A study of home equipment with emphasis on selection, use and care.

303. The House (5). Lec. 2, Lab. 6. Fall, Winter, Spring. Spencer
This course is planned to give the student an appreciation of basic plans, both period and modern, from the standpoint of utility, beauty and economy.

313. Home Furnishing (5). Fall, Spring, Summer. Pr., HE 104. Spencer
This course is a study of home furnishings both from an aesthetic and practical standpoint. This includes the recognition of period furniture and its adaptability to the home of today.

323. Home Management (5). All quarters. Pr., HE 202. Noble
A study of the factors affecting the management of the home for the purpose of meeting individual needs and creating satisfying family environment, emphasis on problems involving the use of time, money, and energy.

333. Cleaning and Lighting Equipment (5). Lec. 2, Lab. 6. Fall. Pr., PS 207, HE 233. Rose
Principles underlying the operation and use of lighting, laundry and other cleaning equipment.

343. Contemporary Materials and Finishes (5). Lec. 3, Lab. 4. Morrill
A study of present day materials and finishes. Laboratory experiences in constructing and renovating furnishings; refinishing, recaning and reupholstering furniture.

353. Community and Family Health (3). Lec. 2, Lab. 3. General elective. Morrill, Noble
A study of health problems related to the community and family including a survey of available health facilities with field trips.

433. Food Equipment (5). Lec. 2, Lab. 6. Winter, alternate Summers. Pr., junior standing, PS 207, HE 233. Rose, Morrill
Principles underlying the operation and use of food equipment.

443. Home Management Residence (5). Each quarter. Pr., junior standing, HE 202, and HE 323. Noble
Residence in the home management house gives actual experience in the different phases of homemaking. Stress is placed on the process of management and satisfactory group relations. Home management houses will accommodate a total of twenty girls each quarter. Application for residence must be filed with the Home Management Department at the beginning of the junior year. The cost is the dormitory room and board fee.

453. The Consumer and the Market (5). Lec. 5. Winter. Pr., junior standing and EC 200. Rose
A study of consumer problems connected with marketing; type of retail outlets, credit, advertising, standardization, labeling, and price policies.

463. Family Economics (5). Lec. 5. Spring. Pr., junior standing, EC 200, HE 453. Rose
A study of budgeting and consumer problems faced by the family.

GRADUATE COURSES

629. Community Nutrition and Consumer Economics (3). Pr., Graduate standing. Van de Mark, Rose
A three-week course to be offered in summer quarters of 1962 and 1963.

630. Home Management Supervision (5). Pr., HE 323 and HE 443. Rose
A study of management problems in supervision. The three home management houses will be used for observation and study.

631. Trends in Home Management (5). Pr., HE 323 and HE 443. Rose
Developments and trends in home management at the state, regional, and national levels.

632. A Survey of Household Equipment (5). Lec. 3, Lab. 4. Rose, Morrill
A survey of equipment in the modern home. Equipment is tested and evaluated in the laboratory where instructional and experimental studies are carried on.

633. Family Housing (5). Lec. 5. Pr., EC 200, HE 303, HE 323. Rose
The history and development of American housing; economical, legal and social aspects; present trends.

634. Economic Problems of Families (5). Pr., HE 323, HE 453. Rose
A study of income distribution, cost of living, the business cycle, taxation, and economic provisions for unemployment, health, accidents, old age, and dependents.

635. Advanced Home Management and Equipment (3). Pr., graduate standing.
A three-week course offered in summer quarters of 1960-61 only.

Horticulture (HF)

Professors Ware, Furuta, and Orr
Associate Professors Amling, Fisher, Harris, and Jones
Assistant Professors Moore and Norton
Instructor Martin

The department offers a curriculum in Ornamental Horticulture and a major in general Horticulture.

The major in general Horticulture prepares graduates for positions as market gardeners, truck growers, fruit and nut growers, or as extension or research specialists in horticulture. The subjects in this course deal with the production, preservation, storage, marketing, and uses of fruits, vegetables, and nuts.

The curriculum in Ornamental Horticulture offers training in landscape gardening, greenhouse management, nursery management, flower shop management and arboriculture. Under the guidance of his major professor the student in Ornamental Horticulture may choose his field of specialty in his Junior Year. Through the choice of technical electives he may specialize in his chosen field. Graduates in this course are prepared for positions as teachers and extension specialists in these fields, as managers of greenhouses, flower shops, nurseries, or a horticulture maintenance business.

Candidates for the degree of Bachelor of Science in Ornamental Horticulture are required to have three months, or an equivalent of three months, practical experience in a greenhouse, nursery, landscape sales lot, or flower shop.

Ornamental Horticulture

101. Introduction to Ornamental Horticulture (1). Lec. 1. Winter. Staff
An orientation course for freshman students introducing all fields in Ornamental Horticulture.

221. Landscape Gardening (5). Lec. 3, Lec.-Dem. 4. Spring, Fall. Fisher
The principles of landscape gardening applied to the development of small home grounds and school grounds. The lecture-demonstration periods are devoted to the study of the identification and use of ornamental plants, landscape drawings, and the propagation and maintenance of ornamental plants.

222. Plant Materials (5). Lec. 3, Lab. 4. Fall. Fisher
The identification, culture and use of ornamental trees in landscape plantings.

223. Plant Materials (5). Lec. 3, Lab. 4. Winter. Orr
The identification, culture, and use of broadleaf and narrowleaf evergreens in landscape plantings.

224. Plant Propagation (5). Lec. 3, Lec.-Dem. 4. Winter. Pr., BY 201-2. Staff
The basic principles and practices involved in the propagation of horticultural plants.

225. Flower Arranging (3). Lec. 2, Lab. 2. Fall. General elective. Orr
The principles and practices of flower arranging for the home.

321. Plant Materials (5). Lec. 3, Lab. 4. Spring. Fisher
The identification, culture and use of deciduous shrubs and small trees in landscape plantings.

322. Garden Management (5). Lec. 3, Lab. 4. Spring. Fisher
The identification, culture and use of annuals and perennials.

323. Floriculture (5). Lec. 3, Lab. 4. Fall. Pr., HF 224, BY 201-2. Furuta
The principles and practices of greenhouse construction and management.

324. Floriculture (5). Lec. 3, Lab. 4. Winter. Pr., HF 323. Furuta
Principles and practices of commercial cut flower production.

325. Landscape Design I (5). Lab. 15. Pr., HF 221. Fisher
The planning of large and small home grounds.

326. Landscape Design II (5). Lab. 15. Pr., HF 221, 325. Fisher
The planning of public areas and grounds of public buildings, including general layout, planting and detail treatment of special areas.

327. Landscape Construction (5). Lab. 15 or Lec. 3, Lab. 4. Pr., HF 325 and 326. Fisher
Planning and preparation of specifications for construction of structures that are considered a part of the landscape treatments of an area. Grading and modification of land areas for various purposes and problems in surface and underground water control to be included.

421. Arboriculture (5). Lec. 3, Lab. 4. Fall. Pr., BY 306, 309, and junior standing. Orr
The principles and practices of the care and maintenance of trees and shrubs, including pruning, tree surgery, transplanting, and fertilization.

422. Floriculture (5). Lec. 4, Lab. 3. Spring. Pr., HF 323 and junior standing. Furuta
The principles and practices of the commercial production of greenhouse pot plant crops.

423. Nursery Management (5). Lec. 3, Lab. 4. Spring. Pr., HF 224, BY 306, AY 304 and junior standing. Orr
The principles and practices of the management of a commercial ornamental nursery.

424. Plant Composition (5). Lec. 3, Lab. 4. Spring. Pr., HF 222, 223, 321, and junior standing. Fisher
The principles and practices of the combination and use of ornamental plants in landscape plantings.

425. Flower Shop (5). Lec. 3, Lec.-Dem. 4. Spring. Pr., HF 422, permission of instructor. Orr
The principles and practices of flower shop management and floral designing.

426-27-28. Minor Problems (5-5-5). Lec. 1, Lab. 8. Any quarter. Pr., senior standing and permission of instructor. Staff
Senior students are assigned minor problems in either Landscape Maintenance, Nursery Management or Floriculture, on which independent library, field or greenhouse investigations are made, under supervision of instructors.

429. Advanced Plant Propagation (5). Lec. 3, Lab. 4. Spring. Pr., HF 224, BY 306, and junior standing. Orr
Commercial propagation of Horticultural plants with emphasis on the physiological and anatomical principles.

430. Marketing Horticultural Specialty Products (5). Lec. 4, Lab. 3. Pr., HF 324, HF 422, HF 423. Furuta
Study of channels and methods of distribution of floricultural and nursery products.

431. Advanced Landscape Gardening (5). Lec. 3, Lab. 4. Fall or Spring. Pr., BY 201, HF 221, graduate standing.
Principles and practices applying to the use of ornamental plant materials in landscaping. (Selected portions of this course may be offered as a 3 hour credit in the Master of Agriculture program.)

General Horticulture

201. Orchard Management (5). Lec. 3, Lab. 4. Each quarter. Moore
A practical course in propagating, planting, pruning, cultivating, fertilizing, spraying, thinning, harvesting, grading, storing and marketing the most valuable fruits and nuts grown in the South.

308. Vegetable Gardening (5). Lec. 3, Lab. 4. Each quarter. Norton
Origin, growth, storage, use, and varieties of vegetables commonly grown in home gardens.

401. Truck Crops (5). Lec. 3, Lab. 4. Fall. Pr., HF 308 and junior standing. Jones
Production and marketing of truck crops. Special consideration is given to crops grown in the South.

404. Fruit Growing (5). Lec. 4, Lab. 2. Winter. Pr., HF 201 and junior standing. Amling
Production and marketing of commercial tree fruits grown in the South.

405. Small Fruits (5). Lec. 4, Lab. 2. Spring. Pr., HF 201 and junior standing. Amling
A study of the principles and practices involved in the production of strawberries, grapes, blueberries, and brambles.

406. Nut Culture (5). Lec. 4, Lab. 2. Fall. Pr., HF 201 and junior standing. Amling
Production and marketing of pecans, walnuts, chestnuts, tung, and filberts.

407. Preparation and Handling of Fruits and Vegetables (5). Lec. 3, Lab. 4. Spring. Harris
Study of the harvesting, grading, packaging, and handling of fruits and vegetables for market.

408. Commercial Vegetable Crops (3). Lec.-Lab. 4. Spring or Summer. Pr., HF 308 and graduate standing. Jones
The application of research information to the commercial production and handling of the principal vegetable crops. (Credit for both HF 408 and 401 may not be used to meet requirements for the Master's degree.)

410. Recent Advances in Small Fruits (3). Spring and Summer. Pr., HF 201 and graduate standing. Amling
Scientific advances in small fruits and their application to small fruit culture in Alabama. (Credit for both HF 410 and HF 405 may not be used to meet requirements for the Master's degree.)

GRADUATE COURSES

601. Experimental Methods in Horticulture (5). Lec. 3, Lab. 6. Any quarter. Staff
A study involving broad purposes of research, discovery, and progress as related to the scientific method; research programs, horticultural programs, selecting projects, reviewing literature, preparing project outlines, conducting experiments, recording data, analyzing data, and publication of results.

602. Horticultural Literature (5). Lec. 3, Lab. 6. Any quarter. Staff
A review of horticultural literature and history of horticultural enterprises, including vegetables, fruits, and ornamentals. The laboratory consists of library assignments and reports.

603. Special Problems in Horticulture (3-5). Credit to be arranged. All quarters. Pr., graduate standing. Staff
Selected problems in vegetable production, pomology, food technology, or ornamental horticulture.

699. Research and Thesis. Credit to be arranged. May be taken more than one quarter. Staff

Industrial Laboratories (IL)

Professor Haynes
Assistant Professors Goolsby, Leffard, Stoves and Wingard
Instructor McMurtry

Courses in the Industrial Laboratories Department are designed chiefly for those interested in the field of production. The basic areas included are casting, machining, inspection, forming, welding, and other fabrication methods of manufacturing. Attention is given also to the needs of sales and maintenance engineering of industrial equipment involved in the various areas.

In cooperation with the School of Education, this Department also offers a program for the professional and technical training of Industrial Arts teachers for elementary and secondary schools. (See School of Education for major and minor requirements.)

These courses are available as electives to all students with the necessary prerequisites.

102. Welding Science and Application (1). Lab. 3.
A study of basic principles and application of welding and cutting processes in the fabrication of metals.

103. Machine Tool Laboratory (1). Lab. 3.
Introduction to metal removal processes. A study of basic machines of production.

104. Sheet Metal Design and Fabrication (1). Lab. 3.
Methods and equipment used in design, production and fabricating of sheet metal products.

105. Foundry Technology (1). Lab. 3.
Basic fundamentals involved in casting products of ferrous and non-ferrous metals.

308. Gages and Measurements (5). Lec. 4, Lab. 2. Pr., IL 103.
Studies in the science of measurement as applied to production and inspection of industrial products.

Manufacturing Processes

These courses are designed to acquaint the student with the basic manufacturing processes including an analysis of machines, tools, and materials, and design of products in the respective areas indicated below:

301. Manufacturing Processes—Casting area (3). Lec. 3. Pr., IL 105.
Analysis of materials, methods, and design of cast products.

302. Manufacturing Processes—Machining area (3). Lec. 3. Pr., IL 103.
A study of the principles of machining metal products.

303. Manufacturing Processes—Shaping, Forming, and Fabricating area (3). Lec. 3. Pr., IL 102.
A study of materials and methods involved in the production of metal products by shaping, forming, and welding processes.

405. Problems in Welding Engineering (5). Lec. 3, Lab. 4. Pr., IL 102.
Advanced phases and techniques of welding and allied processes. Studies in design, weldability of metals, inspection practice, and selection of equipment.

406. Problems in Machining (5). Lec. 3, Lab. 4. Pr., IL 103.
Advanced phases of metal machining with emphasis on production machines and accessories.

The following courses are designed chiefly for the preparation of teachers in Industrial Arts subjects and related fields. Some of these courses are recommended for those interested in avocational areas and hobbies.

101. Woodworking (1). Lab. 3.
Introduction to machines, tools, and materials used in working with wood and plastic.

307. General Metals (5). Lec. 3, Lab. 4. Pr., consent of instructor.
Design, construction and finishing art metal projects.

402. Advanced Woodworking (5). Lec. 3, Lab. 4. Pr., IL 101.
Studies in design, construction, and finishing fine objects of wood.

403. General Shops (5). Lec. 5. Pr., senior standing.
Problems of organization of unit shops into integrated whole for effective use in high school teaching.

415. Shop Work for Elementary Teachers (5). Lec. 2, Lab. 6. Pr., junior standing.
Methods, materials, and techniques involved in conducting activity programs in schools and recreational centers.

416. Materials of Industrial Arts (5). Lec. 5. Pr., senior standing.
History and use of various materials used in industry.

417. Organization of Shop Courses (5). Lec. 5. Pr., senior standing.
Organization and administration of the Industrial Arts program in the public schools.

418. Industrial Arts Design (5). Pr., senior standing.
Fundamentals of design as applied to Industrial Arts projects.

419. Utilization of Machine Tools in Research and Development (1). Lab. 3.
Instruction in the use of machine tools for machining, fabricating and finishing components and assemblies of working models for developmental projects.

420. Industrial Laboratory for Research & Development (1). Lab. 3 Pr., IL 419 or any two basic courses in Industrial Laboratories or approval of instructor.
Individualized instruction of students doing research which requires procurement, construction, and assembly of components and apparatus needed in their research programs.

GRADUATE COURSES

611-12. Technical Problems in Industrial Arts (5-5). Pr., graduate standing.
Advanced study of technology and method in selected areas of Industrial Arts.

Industrial Management (IM)

Professor Cobb, Acting Head
Associate Professors Coppedge, Gates and Layfield
Assistant Professors Bryant, Fowler, Henry and Morgan
Instructor Bell

302. Production Control (5). Lec. 4, Lab. 3. Pr., IM 306.
Planning, scheduling, routing, and dispatching in manufacturing operations; production control systems; mechanisms for production control.

306. Industrial Management (5). Pr., sophomore standing.
Fundamental principles and modern method of control in industry; evolution of industry and management; organization for control of materials, cost, production, purchasing, storekeeping, inventory, quality; labor relations, wages and rates, job analysis.

307. Safety Engineering (5). Pr., sophomore standing.
Principles, practices, organizations, and procedures for industrial accident prevention and plant protection.

308. Inventory Control (5). Pr., IM 306 and IM 302.
Application of principles and techniques to the programming of material requirements, procurement, storekeeping, salvage and conservation.

310. Methods Engineering (5). Lec. 4, Lab. 3. Pr., IM 306 and junior standing.
Study and practice in applying the principles which govern motion economy; work space organization; selection of materials, jigs, fixtures, and equipment; and the application of methods time measurement for the determination of the most economical method of manufacture.

311. Time Study (5). Lec. 4, Lab. 3. Pr., IM 310.
Study and practice in applying the principles governing the establishment of standard data in the various forms required for methods time measurement, wage incentive organizations, budgetary planning and standard cost; and the use of time measuring equipment in problems of standard data determination.

313. Budget Control (5). Lec. 4, Lab. 3. Pr., EC 214 and IM 306.
Purposes, organization, preparation, and administration of industrial budgetary control of purchases, materials, labor, manufacturing expense, production, plant, and equipment.

314. Electronic Data Processing Machines (3). Pr., junior standing.
The function and use of automatic data processing equipment, with an introduction to digital computers.

315. Digital Computer Programming (3). Pr., IM 314, junior standing.
Principles of digital computer programming, with special emphasis on data processing.

316. Electronic Data Processing Systems (5). Lec. 4, Lab. 3. Pr., IM 306, IM 310, IM 311, IM 313 and IM 315.
The application of digital computers to industrial problems.

402. Quality Control (5). Lec. 4, Lab. 3. Pr., EC 345 or MH 467 and senior standing.
Statistical method of quality control for economical manufacture; inspection methods; organization and procedure for quality control; determination of sample size.

405. Industrial Plants (5). Lec. 4, Lab. 3. Pr., EG 104, EG 105, IM 302, and IM 310.
Design and layout of industrial plants.

406. Problems in Industrial Management (5). Pr., IM 302, IM 311, EC 345, and senior standing.
Application of fundamental principles to problems of industry as guide for decisions of management.

410. Industrial Training (5). Pr., junior standing.
Methods, policies, and procedures for training executives, supervisors, technicians, foremen, workers, and apprentices in industry.

411. Plant Location (5). Pr., junior standing.
Industrial surveys to determine economic location of industrial plants.

412. Engineering Economy (5). Pr., junior standing.
Practical engineering studies for the economic selection of alternative structures, equipment, project, processes, and methods by comparison of costs.

413. Sales Engineering (5). Pr., IM 306 and junior standing.
Application of principles and techniques to selling industrial products when a background knowledge of manufacturing processes is required.

414. History of Management (5). Pr., junior standing.
A chronological account of the origin and application of the scientific approach to the control of the means of production and its contribution to industry and society.

415. Plant Maintenance (5). Lec. 4, Lab. 3. Pr., IM 306.
Principles of organizing and controlling maintenance operations of industrial plants.

417. Operations Research (5). Pr., IM 306 and senior standing.
Organized application of scientific methods and techniques to the study of operating problems of management.

418. Contracts and Specifications (3). Pr., senior standing.
Contract documents; specification writing; professional relations.

420. Materials Handling (5). Lec. 4, Lab. 3. Pr., IM 306, IM 311, junior standing.
Materials handling equipment, methods, and systems.

Journalism (JM)

Associate Professor Burnett

In addition to completing the general requirements prescribed by the School of Science and Literature, the English-Journalism major takes 35 hours of course work in English and Journalism. This 35 hours should include EH 390, three journalism courses, and three 300 and 400 English courses. Though a student may major in English and minor in journalism, he is not permitted to major in English-Journalism and also choose journalism as a minor. Students majoring in English-Journalism or minoring in journalism should report to the Professor of Journalism for advice on their programs of study.

English 101-2 or 103-4 is a prerequisite for all courses in journalism.

221. Beginning Newswriting (5).
Introduction to newswriting, newspaper style, and mechanical practice. Supplemented by work on the college newspaper.

223. Reporting (5). Pr., JM 221.
Study and practice in the technical aspects of reporting and newsgathering methods. Supplemented by work on the college newspaper.

224. Copyreading and Editing (5). Pr., JM 221.
The methods of editing copy, writing headlines, basic make-up and proof reading.

315. Agricultural Journalism (3).
Designed for students of agriculture and home economics. Introducing the practices of news coverage and writing, with major emphasis on specialized fields of study.

322. Feature Writing (5). Pr., JM 221 or permission of the instructor.
Gathering material for and the writing of "human interest" and feature articles for newspapers and magazines, with consideration given to the marketing of manuscripts.

323. The Weekly Newspaper (5). Pr., JM 221.
The methods, problems, and policies involved in editing the weekly newspaper, as differing from the metropolitan daily.

421. Photo-Journalism (5).
A study of the uses and processes of photography in the newspaper and magazine field. Operation of press cameras and the technique of developing, printing, and enlarging of pictures is provided.

465. The History and Principles of Journalism (5).
A study of the development of the American Press, the principles and ideals of modern journalism, and the law of the press and radio.

GRADUATE COURSE

605. Agricultural Newswriting (3). Lec. 4. Pr., 20 hours of Journalism or consent of instructor.
A study of the methods and problems of writing agricultural and home economics news, feature articles, and columns for publication. Special attention is given to improving communication of effectiveness between the specialist and the public.

Laboratory Technology (LT)

Professor Schrader
Instructors Attleberger and Crews
Special Lecturer in Medical Technology F. B. Schultz, M.D.

101. Orientation (1). Fall and Winter quarters.
A course designed to acquaint students with the aims, objectives, and requirements for careers in Medical and Laboratory Technology.

301. Hematology (5). Lec. 3, Lab. 6.
This course involves the study, procedures, and examinations of the blood, as recommended by the American Society of Clinical Pathologists.

305. Serology (5). Lec. 2, Lab. 6. Pr., VM 204.
Theory and techniques of laboratory tests based in the antigen-antibody reaction.

401. Advanced Hematology (5). Lec. 3, Lab. 6. Pr., LT 301.
Advanced study of blood cells and blood dyserasias.

402. Seminar in Laboratory Technology (3). Pr., LT 301.
The student reports from the literature on recent advances in the field of laboratory technology.

405. Advanced Serology (5). Lec. 2, Lab. 6. Pr., LT 305.
Theory and techniques of the serological study of human blood.

421. Diagnostic Apparatus (5). Lec. 2, Lab. 9. Pr., PS 206.
Studies in the use of such hospital equipment as are used in X-ray, electrocardographic, and basal metabolism diagnosis.

422. Hospital Laboratory Practice (5). Lab. 15. Pr., LT 301, LT 421.
Practical applications of the principles, procedures, and techniques encountered in hospital laboratories.

423. Advanced Hospital Laboratory Practice (5). Lab. 15. Pr. LT 422.

Library Science (LY)

LY 101. Use of the Library (1). Taught by academic members of the Library staff.
Lectures and assignments designed to facilitate use of the card catalog, periodical indexes, reference books, and the compilation of bibliographies.

Mathematics (MH)

Head Professor Parker
Research Professor Ikenberry
*Professors Ball, Burton, Macon**, Perry, Williams*
Associate Professors Butz, B. Fitzpatrick, Haynsworth, A. J. Robinson, Thompson
Research Assistant Professor Hill
Assistant Professors Baskervill, Cook, Moss, C. E. Robinson, Sanders, Traylor
Instructors Alvord, Bass, Dixon, Frady, Hawkins, Ingram, Light, E. Major, Mazeres, Megibben, Newman, O'Neil, Rautenstrauch, Salzmann
Graduate Assistants Agrusti, Davis, M. Fitzpatrick, Hall, Hartwig, Hoagland, Johnson, Khleif, Kupperbusch, Lynn, P. Major, Maghsoodloo, Marcinowski, Massey, Price, Reed, Richards, Rose, Schmith, Schillings, Temple, K. Williams
Research Assistants Fulp, Whipple

** On leave.

Students who contemplate careers as mathematicians should follow the curriculum found on page 142. This curriculum is designed to prepare a student for graduate work in mathematics. Because of the current emphasis on mathematics and science, numerous fellowships are available to provide capable students with financial aid to pursue graduate work leading to careers in research and college teaching, or careers in industry.

Other students in the School of Science and Literature desiring a major in mathematics should complete the sequences through MH 264 (or MH 301) during the freshman and sophomore years. At the beginning of the junior year, these students must consult the Department of Mathematics on the selection of at least four additional junior and senior mathematics courses to complete this major.

Students in the School of Education desiring a major or minor in mathematics are referred to page 98.

040. Remedial Algebra. Lec. 5. Non-credit.

060. Essentials of Plane and Solid Geometry. Lec. 5. Non-credit.
A course for students who are deficient in high school geometry.

107. College Algebra (5). Pr., Departmental approval.
Credit is not allowed for both MH 107 and MH 111.

108. Mathematics of Finance (5). Pr., MH 107, MH 111, or MH 160.
Simple annuities; general annuities; sinking funds; amortization schedules; depreciation; bonds.

111-12. Introductory College Mathematics (5-5). Pr., MH 060 (or H.S. equivalent) departmental approval. Credit in MH 111 excludes credit in MH 107.
Logic; the number system; sets and their applications to the study of linear equations; systems of equations and inequalities; relations; functions including algebraic, exponential, logarithmic and trigonometric; graphs of relations and functions.
This sequence emphasizes mathematical ideas as well as mathematical manipulation in preparing students for MH 161 or MH 113. It includes the material contained in standard college courses in algebra and trigonometry.

127. Elementary Mathematical Statistics (5). Pr., MH 107, MH 111 or MH 160.
The purpose of this course is to develop elementary statistics based on a limited mathematical background. A study of the normal, binomial, Chi square and Poisson distributions with applications to various fields is included.

160. Introductory College Mathematics (5). Pr., MH 060 (or H.S. equivalent) departmental approval.
A course to be taken in lieu of MH 111-12 by selected students.

161. Analytic Geometry and Calculus (5). Pr., MH 112 or MH 160. First quarter of a four-quarter sequence for technical students.

181-2. Fundamental Mathematics I, II (5-5). Pr., Two quarters of college credit.
A study of the concepts underlying the techniques of arithmetic and algebra. Previous credit for any college mathematics course excludes credit for this course.

331. Higher Algebra (5). Pr., MH 202, MH 252, or MH 263.
Properties of integral domains with special emphasis on the arithmetic of the integers and polynomials.

340. Elementary Topology of the Line and Plane (5). Pr., MH 262 or consent of instructor.
Elementary set theory, the limit concept, basic topological properties of Euclidean spaces of one and two dimensions.

351-2. Finite Mathematics I, II (5-5). Pr., Five hours credit in mathematics and junior standing for MH 351. MH 351 for MH 352.
Laws of logic, theory of sets, probability, vectors and matrices.

361. Differential Equations (5). Pr., MH 301 or MH 264.
Ordinary differential equations with applications.

402. Engineering Mathematics I (5). Pr., MH 361; junior standing.
Fourier series, Laplace transforms, partial differential equations, special functions.

403. Engineering Mathematics II (5). Pr., MH 361; junior standing.
Complex numbers, functions, mappings, residues, contour integration.

404. Engineering Mathematics III (5). Pr., MH 361; junior standing.
Vector analysis, with applications.

420-1. Advanced Calculus (5-5). Pr., MH 264 or MH 301; junior standing.
Sets, sequences, functions, limits, continuity, derivatives, Riemann integral, series, uniform convergence.

428. Linear Differential Systems (5). Pr., MH 420 or consent of instructor; junior standing.
Systems of linear ordinary differential equations, series solutions, approximate solutions.

431. Introduction to Modern Algebra (5). Pr., MH 331; junior standing.
Integral domains, groups, rings, fields.

435. Theory of Numbers I (5). Pr., MH 331; junior standing.
Theorems on divisibility; prime numbers; congruences; theorems of Fermat, Euler, and Wilson; power residues.

437. Introduction to the Theory of Matrices (5). Pr., MH 331 or consent of instructor; junior standing.
Rectangular matrices and elementary transformations; equivalence of matrices and of forms; linear spaces; matric polynomials.

443. Solid Analytic Geometry (5). Pr., MH 202 or MH 263; junior standing.
Solid analytic geometry, non-Euclidean geometry.

444. Analytic Projective Geometry (5). Pr., MH 202 or MH 263; junior standing.
Coordinates; transformations; conics; quadrics.

447. Foundations of Plane Geometry (5). Pr., MH 264 and junior standing.
An axiomatic development of a plane geometry. Points, lines, congruences. Emphasis is placed on development of proofs by students.

460. Numerical Analysis I (5). Pr., MH 264; junior standing.
An introduction to numerical analysis and computing with emphasis on methods of solution adaptable to electronic computing machinery. Credit for MH 407 precludes credit for this course.

461. Numerical Analysis II (5). Pr., MH 361 or MH 428, and MH 460; junior standing.
Interpolation; systems of linear equations; numerical differentiation and integration; ordinary differential and difference equations.

467. Mathematical Statistics I (5). Pr., MH 202 or MH 263; junior standing.
Data in distribution functions; theoretical distribution functions; moment generating function, normal, binormal, Poisson, Student "t", chi-square and "F" distribution functions; large-sample theory; linear and curvilinear correlation.
NOTE: Courses numbered between 480 and 489 are for majors in the School of Education.

481. College Geometry (5). Pr., MH 252 or MH 202 or MH 263; junior standing.
Classical Euclidean geometry; loci; indirect construction; the nine point circle; homothetic figures.

485. Fundamentals of Algebra I (5). Pr., MH 252 or MH 202 or MH 263; junior standing.
A study of algebra with emphasis given to the explicit statement of the postulates and the logical development from these basic assumptions.

486. Foundations of Geometry (5). Pr., MH 252 or MH 202 or MH 263; junior standing.
A study of Euclidean and non-Euclidean geometries with emphasis given to their logical development from basic assumptions. Some of the more interesting theorems of the different geometries will be discussed but no attempt will be made to develop any of the geometries completely. Some attention will be given to the history of geometry.

487. Fundamentals of Analysis (5). Pr., MH 202 or MH 252; junior standing.
A study of mathematical analysis with emphasis on basic principles and relationships.

488. Fundamentals of Analysis II (5). Pr., MH 487.
A continuation of MH 487, Fundamentals of Analysis.

GRADUATE COURSES

601-2-3. Celestial Mechanics I, II, III (5-5-5). Pr., consent of instructor.
Elliptic motion, series expansions in elliptic motion, potentials of attracting bodies, numercial integration and differential correction of orbits, lunar theory, theory of perturbations, Lagrange's method and introduction to canonical variables, the disturbing function, artificial satellite orbit theory.

607-8-9. Applied Mathematics I, II, III (5-5-5). Pr., Approved graduate standing.
Scalar, vector, and dyadic fields; equations governing fields; Helmholtz's and Laplace's equations in curvilinear coordinates; separation of variables; boundary conditions and eigenfunctions; Green's functions.

610. Special Functions (5). Pr., consent of instructor.

620-21. Introduction to Analysis I, II (5-5). Pr., departmental approval.
Real and complex number systems; elements of set theory; limits; series; continuity; differentiation; Riemann-Stieltjes integral; functions of several real variables.

622-23. Functions of a Complex Variable I, II (5-5). Pr., MH 620.
Complex numbers; analytic functions; derivatives, Cauchy integral theorem and formula; Taylor and Laurent series; analytic continuation; residues; Maximum principle; Riemann surfaces; conformal mapping; families of analytic functions.

624-25. Linear Topological Spaces I-II (5-5). Pr., MH 621.
Normed linear spaces, Banach spaces; bounded linear transformations; linear functionals; Riesz-representation theorem; convex sets and applications; Hilbert space.

626-27. Functions of Real Variables I, II (5-5). Pr., MH 620.
Real number system; measurable sets; Baire classes; Lebesgue integral; properties of the integral; Stieltjes and Denjoy integral.

628-29. Advanced Theory of Differential Equations (5-5). Pr., MH 621.
Existence, uniqueness and continuation theorems for ordinary and partial differential equations; nature of solutions. The first quarter will be devoted to ordinary equations, the second to partial differential equations.

631-32. Modern Algebra I, II (5-5). Pr., MH 431.
Numbers; sets; groups; rings; fields and polynomials; Galois theory.

633. Theory of Groups (5). Pr., MH 631.
Sylow theory, abelian groups, chain conditions.

634. Theory of Rings (5). Pr., MH 631.
Structure of rings, ideals in commutative rings.

635. Theory of Numbers II (5). Pr., MH 435.
Distribution of primes; Diophantine analysis; number lattices; selected topics from classical number theory.

637. Matrices (5). Pr., MH 437.
Special types of Matrices; reduction to canonical form; readings in current literature.

645-46. Differential Geometry I-II (5-5). Pr., MH 620.
Tensor analysis; curves and surfaces in Euclidean space; introduction to Riemannian geometry of n-dimensions.

650-51-52. General Topology (5-5-5). Pr., MH 620.
An axiomatic development of point set topology; connectivity, compactness, separability, topological equivalence, well-ordering, inner limiting sets, Cartesian products.

653. Dimension Theory (5). Pr., MH 651.
The topological study of dimension in separable metric spaces.

654-55. Point Set Topology (5-5). Pr., MH 652.
Upper semi-continuous collections, indecomposable continua, metrization problems, other topics.

661. Advanced Numerical Analysis (5). Pr., MH 461.
Matrices and systems of linear equations; systems of ordinary differential equations; partial differential equations.

667. Mathematical Statistics II (5). Pr., MH 467.
Multiple and partial correlation; small-sample theory; non-parametric methods; testing goodness of fit; testing statistical hypothesis; statistical design in experiments; sequential analysis.
NOTE: Courses numbered between 680 and 689 are for majors in the School of Education.

681. College Geometry II (5). Pr., MH 481 or departmental approval.
Selected advanced topics in Euclidean geometry.

682. Applications of Mathematics (5). Pr., approved graduate standing.
Foundations of business mathematics and applications from annuities; depreciation systems; amortization and sinking funds; life insurance and a development of the calculus as needed.

683. Number Systems (5). Pr., approved graduate standing.
A study of the properties of the integers, rational numbers, irrational numbers; Euclidean algorithm, unique factorization, the rational operations; square roots; number systems with bases other than 10.

685. Fundamentals of Algebra II (5). Pr., approved graduate standing.
Not a continuation of MH 485. Basic concepts of equation theory; transformations; algebraic curves.

691. Directed Reading in Algebra. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

692. Directed Reading in Analysis. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

693. Directed Reading in Applied Mathematics. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

694. Directed Reading in Geometry. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

695. Directed Reading in Topology. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

696. Directed Reading in Matrix Theory. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

697. Directed Reading in Numerical Analysis. Credit to be arranged. Pr., 10 hours of 600 courses in the area.

699. Research and Thesis. Credit to be arranged. May be taken more than one quarter.

799. Research and Dissertation. Credit to be arranged.

Mechanical Engineering (ME)

Head Professor Vestal
Professors Jones, Maynor, Shaw, and Tanger
Associate Professors Barbin, Cox, Elizondo, Fluker, Jemian, Lawson, Min, Scarborough, Smith, and Ward
Assistant Professors Cooley, Ingalls, and Vance
Instructor Mueller

202. Engineering Materials Science—Structure (3). Pr., CH 103, PS 201 or PS 205.
Theories and structures of crystalline and amorphous materials. Bonding, crystal classes, phase equilibrium relationships, diffusion and phase transformations.

205. Applied Mechanics—Statics (5). Pr., PS 201, corequisite, MH 263.
Resolution and composition of forces; equilibrium of force systems; friction, centroids, moments of inertia.

206. Engineering Materials Science—Properties (3). Pr., ME 202.
Relationships between structure and properties and the effects of environment. Mechanical properties, plasticity of single and poly-crystals, and properties of composite materials.

301. Thermodynamics I (5). Pr., MH 263 and PS 202. (Excludes credit in ME 310).
A study of the laws of thermodynamics and related fundamental concepts.

302. Thermodynamics II (5). Pr., ME 301. (Excludes credit in ME 310.)
Applications of the laws of thermodynamics to cycles, fluid flow, and mixtures.

306. Strength of Materials I (5). Pr., ME 205 and MH 263.
Fundamentals of stress and strain, stress-strain relations, and related problems.

307. Applied Mechanics—Dynamics (5). Pr., ME 205 and MH 263.
Types and principles of motion; action of unbalanced force systems affecting the motion of rigid bodies.

308. ME Laboratory I (1). Lab. 3. Corequisite, ME 302.
Mechanical laboratory experiments and reports.

309. Materials Testing Laboratory (1). Lab. 3. Pr., ME 306.
Testing of engineering materials in tension, in compression, and for hardness.

310. Thermodynamics (5). Pr., MH 263 and PS 202.
A study of gases and vapors, cycles, mass and heat transfer. (For non-Mechanical Engineering students only.) (Credit in ME 310 excludes credit in ME 301 and 302.)

311. ME Laboratory II (1). Lab. 3. Pr., ME 302 and ME 308.
Mechanical Engineering Laboratory experiments and reports.

313. Fluid Mechanics (5). Pr., ME 307 and ME 302 or ME 310.
Statics and dynamics of compressible and incompressible fluids.

316. Strength of Materials II (5). Pr., ME 306.
Advanced stress analysis.

319. Elementary Heat Power (5). Pr., CH 104, PS 205, MH 252.
Introduction to power plant equipment, fuels and combustion, spark ignition and compression ignition engines, steam and gas cycles. (For non-Mechanical Engineering students only.)

335. Engineering Materials Science—Physical Metallurgy (4). Lec. 3, Lab. 3. Pr., ME 206, Coreq., ME 306.
Relationship between structure and properties of metals. Melting and solidification, crystal structure, dislocation and imperfection theories, alloying, deformation, and transformations.

410. Power Plants (5). Pr., ME 302 and senior standing.
Power plants and components; fuels and combustion; elements of design.

411. ME Laboratory III (2). Lec. 1, Lab. 3. Pr., ME 311 and ME 412.
Advanced experiments in ME Laboratory and reports.

412. Internal Combustion Engines (5). Pr., ME 302 or ME 310 and junior standing.
Thermodynamics, design, and performance of Otto and Diesel engines; fuels and combustion.

414. Turbomachines (5). Pr., ME 313 or CE 308, junior standing.
The application of fluid mechanics to turbomachines, such as pumps, turbines, and fluid couplings; control devices.

421. Heat Transfer (5). Lec. 4, Lab. 3. Pr., ME 302, ME 313 or AE 301, EE 320, MH 402, senior standing.
Fundamental principles of heat transfer by steady and unsteady conduction, thermal and luminous radiation, boiling and condensation, free and forced convection.

424. ME Laboratory IV (2). Lec. 1, Lab. 3. Pr., ME 311 and ME 410.
Advanced experiments in ME Laboratory and reports. (No graduate credit permitted for M.M.E.)

425. Gas and Steam Turbines (5). Pr., ME 302 and senior standing.
Thermodynamic theory and design of nozzles and blade paths for gas and steam turbines.

426. Steam Turbines (5). Pr., ME 302 and senior standing.
Thermodynamic theory and design of steam turbines.

427. Mechanical Vibrations (5). Pr., ME 306, ME 307, and junior standing. Pr., or Coreq., MH 402.
Theory of vibration of systems of one or more degrees of freedom, with and without damping; systems with distributed constants and self-induced vibration.

428. Air Conditioning and Refrigeration (5). Pr., ME 302 or ME 310, and junior standing.
Theory and design of heating, cooling and ventilating systems, and refrigeration systems, including cryogenics.

429. Power Plant Design (5). Pr., ME 410 and junior standing.
Design problems and layout of a power plant.

430. Internal Combustion Engine Problems (5). Pr., ME 302, ME 412.
Application of internal combustion engine theory to the design of engines.

432. Automatic Controls (5). Pr., MH 361, ME 307, ME 313, EE 331, and junior standing.
Process analysis; methods of control; closed loop in control; feedback systems; analysis of system problems.

434. Fluid Mechanics and Heat Transfer (5). Pr., ME 310 and junior standing.
The mechanics of compressible and incompressible fluids and the transmission of heat by conduction, convection, and radiation. (For non-Mechanical Engineering students only.)

436. Engineering Materials Science—Ferrous Metallurgy (5). Pr., ME 335 and junior standing.
Design of ferrous metals following modern theory and practice. Hardenability, alloying, deformation, and special purpose steels.

437. Engineering Materials Science—Nonferrous Metallurgy (5). Pr., ME 335 and junior standing.
Design of nonferrous metals following modern theory and practice. Aluminum and copper-beryllium systems, corrosion resistant alloys, refractory metals, strengthening mechanisms, spacecraft environments.

439. Machine Design I (4). Lec. 3, Lab. 3. Pr., ME 206, ME 306, ME 307.
Design of machine elements with emphasis on the analysis of static stresses.

440. Machine Design II (4). Lec. 3, Lab. 3. Pr., ME 439, ME 316; Pr., or Coreq., ME 427.
Design of machine elements with emphasis on the analysis of dynamic stresses and creative design.

441. Engineering Systems I (5). Lec. 4, Lab. 3. Pr., senior standing and approval of Department Head.
Typical problems requiring the development of skill in the use of analysis, synthesis and creativeness to design, evaluate, and optimize engineering systems.

442. Engineering Systems II (5). Lec. 4, Lab. 3. Pr., ME 441.
A continuation of ME 441.

450. Special Problems. (Credit 1-5). Pr., Department Head approval, junior standing.
Individual student endeavor under staff supervision involving special problems of an advanced nature.

GRADUATE COURSES

600. Fluid Dynamics (3). Pr., MH 404 and graduate standing.
Navier-Stokes Equations. Exact and approximate solutions. Euler's equations. Continuity. Energy equations. Irrotational flow. Crocco's theorem. Creeping flow. Turbulence and Reynolds' Equations.

601. Boundary Layer Theory (3). Pr., ME 600 or CE 612.
Hydrodynamic, thermal, mass and magnetic boundary layers. Prandtl's equations. Momentum equations. Energy equations.

602. Gas Dynamics (3). Pr., ME 600 or CE 612.
Compressible flow equations. Isentropic flow. Fanno line flow. Rayleigh line flow. Shock waves. High speed flow. Internal and external flows. Forces on immersed bodies.

603. Fluid Machines (3). Pr., ME 602.
Similarity considerations. Cavitation. Cascade theory. Axial and radial flow machines.

604. Advanced Thermodynamics I (3). Pr., ME 302 and graduate standing.
Study of the first and second laws of thermodynamics, Carnot cycle and Kelvin temperature scale and applications.

605. Advanced Thermodynamics II (3). Pr., ME 604.
Chemical thermodynamics, physics of low temperatures, thermodynamics of fluid flow and rocket systems.

606. Propulsion Systems (4). Pr., departmental approval.
Chemical systems including liquid and solid rocket engines; thermionic engines and ionic propulsion; plasma and nuclear propulsion systems.

607. Energy Conversion Systems (3). Pr., ME 410 or departmental approval.
Electromechanical energy conversion; thermoelectricity; thermionic converters; Photovoltaic conversion; magnetohydrodynamic generators; fuel cells.

612. Engineering Analysis (3). Pr., departmental approval.
Study of equilibrium, eigenvalue, and propagation problems for continuous systems. Physical laws and mathematical properties discussed with considerable emphasis on numerical solutions.

615. Experimental Research Methods (3). Pr., departmental approval.
Numerical methods and data processing, mathematical statistics and probability, analysis of experimental data, errors of measurement, and instrumentation.

620. Heat Transmission—Conduction (3). Pr., ME 421.
Fourier's general equation, influence of heat sources and sinks, analog and numerical methods of solving heat transfer problems, heat transfer from extended surfaces, transient heat transfer with steady and unsteady boundary conditions.

621. Heat Transmission—Convection (3). Pr., ME 421.
General problems of convection, forced convection heat transfer, free convection, thermodynamic boundary layers, condensing and boiling, heat transfer to liquid metals and analysis of heat exchangers.

622. Heat Transmission—Radiation (3). Pr., ME 421.
Fundamental laws of radiation, net radiation methods, configuration factors, radiation through absorbing media, solar terrestrial and celestial radiation, and thermometry and temperature control.

630. Advanced Strength of Materials (3). Pr., ME 316, MH 361, or departmental approval.
Selected topics in strength of materials. Beam on elastic foundation, graphical representations of three dimensional stress state, bending of curved bars, theories of failure.

631. Theory of Elasticity I (3). Pr., departmental approval.
Three dimensional theory of stress and strain for small deformations. Applications to problems of plane stress and plane strain. Solutions by Airy Stress function and Kolosov-Muskhelishvili methods.

632. Theory of Elasticity II (3). Pr., ME 631.
Selected topics in three dimensional problems. Torsion of bars, bending of prismatic bars, thermal stresses, introduction to the general (non-linear) theory of elasticity.

633. Experimental Stress Analysis (3). Pr., ME 316 or departmental approval.
A study of the relationship between strains and stresses. Use is made of modern experimental stress analysis techniques such as electric resistance strain gages, photoelasticity, brittle coatings, and photostress.

634. Elastic Stability (3). Pr., ME 631, CE 633, or departmental approval.
Buckling failure of columns by bending, twisting or shear; lateral buckling of beams; shear buckling; buckling of thin plates and shells. Applications to problems.

635. Intermediate Dynamics (3). Pr., ME 307, MH 361.
Dynamics of particles and systems of particles applied to engineering problems. Work and energy, and impulse and momentum principles. LaGrange's equations and Hamilton's principle.

636. Non-Linear Oscillations (3). Pr., ME 307, ME 427, or departmental approval.
Free, forced, and self-excited oscillations in mechanical systems. Relaxation oscillations, response curves and stability considerations.

637. Theory of Plates (3). Pr., departmental approval.
Analysis of stress, strain, and deformation of plates under applied transverse loads. Applications to plates of different geometries with various boundary conditions.

638. Theory of Shells (3). Pr., departmental approval.
Analysis of stress, strain and deformation of shells under applied loads.

660. Metallurgy of the Solid State (3). Pr., departmental approval.
A presentation of basic principles relating to the behavior of materials. Ultimate structure of matter, crystalline structures, thermodynamic stability and reaction kinetics are discussed along with bonding, dislocations, polycrystalline structures, mechanical and thermal properties, electronic conduction, semi-conduction, and insulation. Considerable emphasis on application to real problems, predominantly of the engineering type.

661. Metallurgy of Corrosion (3). Pr., departmental approval.
Nature and mechanism of corrosion. Effect of manufacturing methods including heat treatment. Effect of environment. Corrosion types and methods of corrosion prevention.

662. Performance of Metals at Elevated Temperatures (3). Pr., departmental approval.
Fundamental behavior of metals at elevated temperatures. Commercial and experimental types of ferrous and non-ferrous alloys and their suitability for elevated temperature applications. Major emphasis is placed on correlation of theory and experiment, particularly as this relates to the application of dislocation theory to creep, fatigue, and other manifestations of plastic deformation associated with elevated temperature environments.

663. Science of Foundry Operations (3). Pr., departmental approval.
Fundamental principles are developed and related specifically to the founding of metals. Free energy, the equilibrium constant, and activity are considered along with heat transfer in the unsteady state, direction of reaction, and rate of reaction. Properties associated with cast and wrought conditions, respectively, are contrasted and evaluated.

664. Origin and Criteria of Metal Failures (3). Pr., departmental approval.
Defects occurring as a result of primary and subsequent processing operations are presented in the light of their effect on service life. Interpretation of evidence of deterioration and prolongation of service life are considered along with methods of minimizing failure. Considerable emphasis is given to what constitutes failure and relative significance of failure.

665. Phase Diagrams of Metal Systems (3). Pr., departmental approval.
Methods of representing and interpreting phase equilibria. Binary and multicomponent systems. Simpler temperature-composition systems and more complex temperature-pressure-composition systems. Major emphasis on applications. Minor emphasis on phase diagram determination and thermodynamics.

690. Seminar (credit to be arranged). May be taken more than one quarter.

691. Directed Reading in Mechanical Engineering (credit to be arranged). May be taken more than one quarter.

699. Research and Thesis (credit to be arranged). May be taken more than one quarter.

799. Research and Dissertation (credit to be arranged). May be taken more than one quarter.

Military Science (MS)

Program of Instruction

BASIC COURSE

First Year (Freshmen) MS 101 (3 class, 2 drill periods) (1 credit)

Organization of the Army and ROTC
Individual Weapons and Marksmanship
United States Army and National Security
Leadership Laboratory (Drill)

MS 102, MS 103 (Drill only) (1 credit each)

Second Year (Sophomores) MS 201, 202, and one of MS 213, 223, 243, or 253, depending on Branch. (2 class, 2 drill periods). (1 credit each)

American Military History
Map and Aerial Photograph Reading
Branch Tactics and Techniques
Leadership Laboratory (Drill)

ADVANCED COURSE

Third Year (Juniors)

Each branch teaches the same general subjects with emphasis on its application to the particular Branch—Armor, Artillery, Corps of Engineers, or Signal Corps.

The blocks of instruction are: Leadership; Military Teaching Principles; Branch Tactics; and Pre-Camp Orientation. All classes meet 4 days per week per quarter with 2 drill periods per week; 3 credits per quarter.

MS 311, 312, 313—Artillery
MS 321, 322, 323—Corps of Engineers
MS 341, 342, 343—Signal Corps
MS 351, 352, 353—Armor

Fourth Year (Seniors)

Each branch as in MS 3, teaches the same general subjects with emphasis upon application to the particular branch.

Blocks of instruction are: Operations; Logistics; Military Administration; Military Law; The Role of the United States in World Affairs; Service Orientation; Branch Tactics; Leadership Laboratory (Drill).

All classes meet 4 hours per week per quarter with 2 drill periods per week; 3 credits per quarter.

MS 411, 412, 413—Artillery
MS 421, 422, 423—Corps of Engineers
MS 441, 442, 443—Signal Corps
MS 451, 452, 453—Armor

Music (MU)

Head Professor Liverman
Professors Glyde, Hinton and Tamblyn
Associate Professor Bentley°°
Assistant Professors MacGregor°, Renard, Richardson, Rosenbaum, Sturdivant, R. Stycos and Walls
Instructors Hargett° and P. Stycos°

131-32-33. Music Theory I-II-III (3-3-3). Pr., MU 102 or by permission.
An integrated course in the development of listening, performing, and writing techniques; elementary diction, analysis, music reading, and diatonic harmony.

151-52-53. Survey of Music Literature (1-1-1). Lec. and Lab. 3-3-3.
The presentation of vocal solo and choral, keyboard and chamber music, acquainting the student with musical compositions and composers with emphasis on music literature of the past three centuries.

231-32-33. Music Theory IV-V-VI (3-3-3). Pr., MU 133.
A continuation of composite theory through chromatic harmony; analysis of larger forms; continued music reading and keyboard harmony.

251-52-53. Survey of Music Literature (1-1-1). Lec. and Lab. 3-3-3.
The presentation of instrumental solo, opera and symphonic music, acquainting the student with musical compositions and composers with emphasis on music literature of the past three centuries.

254. Music Literature for Music Education Majors (3).
A general survey of choral and instrumental literature. (This course excludes credit for MU 151-52-53, 251-52-53 Survey of Music Literature.)

331-32-33. Modern Harmony I-II-III (3-3-3). Pr., MU 233.
Twentieth-century harmonic devices. An integrated approach to understanding contemporary writing, with emphasis on original work and analysis of the principal departments from "traditional" harmony.

334-35-36. Counterpoint I-II-III (3-3-3). Pr., MU 233.
I. Strict Counterpoint. Counterpoint in 5 species in 2 or 3 voices concluding with invertible counterpoint. II. Tonal counterpoint. Contrapuntal devices of the 18th Century including double counterpoint and imitation. III. Invention and Fugue. The study and writing of 2 part inventions, canonic treatment, and the 3 voice fugue.

351-52-53. Music History I-II-III (3-3-3).
The development of music from early times to the present day. Lectures, recorded examples, readings.

361-62-63. Conducting I-II-III (3-1-1). Pr., MU 133.
I. Elementary basic baton techniques and introduction to score reading. II. Choral conducting. Elementary course in choral score reading and conducting choir and glee clubs. III. Instrumental conducting. Elementary course in instrumental score reading and conducting band, orchestra and instrumental ensembles.

409. Marching Band Techniques (5).
A study of fundamental methods and procedures of the Marching Band.

° Temporary.
°° On leave.

411-12-13. Tuning and Repairing Pianos (1-1-1). Lab. 3-3-3. Pr., senior standing.
Basic principles of piano tuning such as tuning unisons, octaves, setting temperaments, etc., simple action and damper repair, action regulating and the replacing of strings and worn-out parts which can normally be done by the music instructor.

414. Care and Repair of Musical Instruments (1). Lec. 1, Lab. 3. Pr., senior standing.
The selection, care and repair of woodwind, brass and string instruments with emphasis on adjustments which should be made by the instrumental director.

417-18-19. Mechanics of the Organ (1-1-1). Lab. 3-3-3.
A course in organ construction including inspection of various types of organs with a view to preparing the organist to make minor repairs and adjustments.

431-32-33. Music Analysis (3-3-3). Pr., senior standing.
Harmonic and structural analysis of smaller instrumental forms; harmonic and structural analysis of the larger polyphonic and homophonic forms.

434-35-36. Music Composition I-II-III (3-3-3). Pr., MU 233.
The analysis, study, and writing of musical compositions in small, compound, and larger musical forms with emphasis on both stylistic and individual creative writing.

437-38-39. Orchestration I-II-III (3-3-3). Pr., MU 233.
Ranges, notation, and characteristics of orchestral instruments. Exercises in arranging for combinations of string and wind instruments. Theory and practice of orchestration for full orchestra.

441. Piano Pedagogy (3).
A course for prospective piano teachers. Study of teaching methods for beginners and succeeding levels. Classification and analysis of teaching repertoire.

442. Vocal Pedagogy (3).
A course for prospective voice teachers. An intensive study of the materials and methods of voice training. Classification and analysis of teaching repertoire.

443. String Pedagogy (3).
The mechanics of stringed instruments. Teaching methods, schools, and systems. Teaching literature and repertoire.

444. Instrumental Pedagogy (3).
The mechanics of brass or woodwind instruments. Teaching methods and repertoire with emphasis on solo instrumental literature.

445. Theory Pedagogy (3).
Course required of seniors majoring in theory and composition. Designed to present the problems of sightsinging, rhythmic dictation, melodic and harmonic dictation, and part writing from a pedagogical viewpoint. Intensive review of harmony and dictation, together with a survey of several of the most commonly used texts.

451. Keyboard Literature (3). Pr., junior standing.
A study of the masterworks of the clavichord, harpsichord, organ, and piano literature from the Baroque period to the present.

452. Vocal Literature (3). Pr., junior standing.
A course presenting vocal literature from Elizabethan time to the present, including representative European and American repertoire.

453. Choral Literature (3). Pr., junior standing.
A chronological study of choral music from the Middle Ages to the present including opera, and oratorio with detailed examination of representative works.

454. Instrumental Literature (3).
Analysis and study of orchestral scores and parts from the classic, romantic and modern literature.

General Elective Courses

371. Introduction to Music (3). No credit allowed to Music Majors and Minors.
An introductory course in the understanding of music including an explanation of basic terms, notations, rhythm, tonal system, vocal and piano score reading.

372. Music in the Western Civilization (3). May not be taken for credit by Music Majors or Minors.
Music as related to the philosophical, economical and social growth of our culture from the Roman Empire to the 20th Century.

373. Appreciation of Music (3). May not be taken for credit by Music Majors or Minors.
Outstanding composers and compositions. No previous music training required; an orientation in the art of listening.

374. Masterpieces of Music (3). May not be taken for credit by Music Majors or Minors.
A study of the representative musical works of each great period of musical history. No previous music training required.

375. History of Jazz (3). May not be taken for credit by Music Majors or Minors.
A study of the origin, development and styles of jazz music; people important in the development of American jazz music.

376. Music for Ballet and Theatre (3). May not be taken for credit by Music Majors and Minors.
A survey of outstanding musical scores in the field of ballet and the theatre with special emphasis on the modern American musical theatre.

377. Music Arranging (3). By permission.
A project course in arranging various combinations from quartet to symphonic band, and arranging for solo and choral groups.

Group Performance Courses*

121-22-23. Glee Club (1 hour credit per quarter).
The MEN'S GLEE CLUB and the WOMEN'S GLEE CLUB are study and performing groups open to any Auburn student. No previous experience in group singing is required. Glee Club may be taken with or without credit.

221-22-23. Mixed Chorus (1 hour credit per quarter).
The MIXED CHORUS is a large performing group open to any Auburn student. No previous experience in group singing is required. This group annually performs Handel's "Messiah," and other large choral compositions. Mixed Chorus may be taken with or without credit.

321-22-23. Concert Choir (1 hour credit per quarter).
The CONCERT CHOIR is a smaller mixed chorus for the study and performance of serious choral literature; open to any Auburn student by audition only. Concert Choir may be taken with or without credit.

124-25-26. Concert Band (1 hour credit per quarter).
Members of the Band are selected during the first week of each quarter at the regular meeting hour. The Band will require a minimum of 5 rehearsal hours per week from all members. Extra rehearsals may be scheduled as necessary. Band members will be required to be present at all rehearsals and all public performances. The Concert Band may normally be expected to perform at two campus programs and one concert tour each year. The Concert Band may be called upon from time to time to serve as a marching organization for various public parades. Concert Band may be taken with or without credit.

127-28-29. Orchestra (1 hour credit per quarter).
Members of the symphonic orchestra are selected by try-outs held during the first week of each quarter at the regular meeting hour. Orchestra may be taken with or without credit.

224-25-26. Marching Band (1 hour credit per quarter).
This band provides music for the athletic contests and half-time shows at football games as well as various parades, pep rallies, and other campus and off-campus events which use marching band. The Marching Band, during the fall quarter, will rehearse a minimum of 9 hours per week. Physical Education may be waived for students during the fall quarter in which they are members of the Marching Band. (See Band Director for details.) Marching Band may be taken with or without credit.

227-28-29. Opera Workshop (1 hour credit per quarter).
The Opera Workshop is open to all students interested in any phase of opera, including performance, stage-craft, make-up, conducting, and coaching. A minimum of three hours per week rehearsal or stage-craft is required and extra time may be scheduled as necessary. Opera Workshop may be taken with or without credit.

324-25-26. Music Ensemble (1 hour credit per quarter). (By permission.)
A course primarily for advanced musicians for the study and performance of musical compositions for small instrumental and vocal groups requiring a minimum rehearsal of three hours per week. Music Ensemble may be taken with or without credit.

327-28-29. Piano Ensemble (1-1-1). Lab. 3-3-3.
Study through performance of original compositions and transcriptions for piano-four-hands and two pianos using two to four players.

Applied Music**

Piano

081-82-83. Elementary Piano (No credit).
General keyboard facility, sight reading of folk tunes and easier classics; repertory of simple piano material; harmonization and transposition of folk tunes and familiar songs; elementary improvisation.

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* With the Dean's approval maximum credit permitted for regular college students in Group Performance Courses is 6 quarter hours; for Music Majors, 12 quarter hours.

** Only MU majors in Bachelor of Arts or Bachelor of Music curricula may receive more than 1 hour credit per quarter for each applied music course.

181-82-83. Intermediate Piano (1, 2, or 3 hrs. per quarter). Pr., MU 043 or 105.
Individual instruction in piano. The student is trained in correct touch and reliable technique, by playing correctly all major and minor scales in moderately rapid tempo, broken chords in octave positions in all keys by establishing systematic methods of practice and by performing typical standard etudes, such as: Czerny, op. 299, Book 1; Heller, Op. 46 and 47; Bach, Little Preludes; a few Bach Two-part Inventions; and compositions corresponding in difficulty to Haydn Sonata No. 11, G Major No. 20 (Schirmer); Mozart, Sonata C. Major No. 3, F Major No. 13 (Schirmer); Beethoven, Variations on Nel cor piu, Sonata Op. 49, No. 1; Schubert, Impromptu. Op. 142 No. 2, etc.

281-82-83. College Piano I (1, 2, or 3 hrs. per quarter). Pr., Acceptable playing of works from MU 143.
Bach, French Suites, and Two-part Inventions; Czerny, Studies; Beethoven, Sonatas in grade of difficulty to Op. 14 No. 1; Romantic and Contemporary pieces recommended by the instructor.

381-82-83. College Piano II (1, 2, or 3 hrs. per quarter). Pr., Acceptable playing of works from MU 243.
Bach, Well Tempered Clavichord, Three-part Inventions; Czerny, Studies, Op. 740; Beethoven, Sonatas in grade of difficulty to Op. 2, No. 1; Romantic and Contemporary pieces.

481-82-83. Advanced College Piano (1, 2, or 3 hrs. per quarter). Pr., Acceptable playing of works from MU 343.
Bach, Well Tempered Clavichord; Chopin, Etudes; Brahms, Schumann and more advanced work in Romantic and Contemporary composers.

Voice

084-85-86. Elementary Voice (No credit).
First principles of voice production, diction and singing; song material for development toward performance. Exercises for voicing and facility; correct posture and breathing.

184-85-86. Intermediate Voice (1, 2, or 3 hrs. per quarter). Pr., MU 046 or 108.
Individual instruction in singing. The student is trained to sing on pitch with correct phrasing and musical intelligence standard songs in good English (the simplest classics are recommended). The singing of simple songs at sight is stressed. Some knowledge of piano is urgently recommended.

284-85-86. Voice I (1, 2, or 3 hrs. per quarter). Pr., Acceptable singing of songs from MU 146.
The study of tone production, vocal resonance and mastery of correct breathing, vowels and consonants in their relation to the singing and speaking voice; vocalises and arpeggios; songs of moderate difficulty in correct intonation and interpretation. Italian classics recommended.

384-85-86. Voice II (1, 2, or 3 hrs. per quarter). Pr., Acceptable singing of songs from MU 246.
Continuation of the study of voice production, drill in diction and phrasing. French, German or Italian art songs. Contemporary American composers. Oratorio or Opera Arias.

484-85-86. Advanced Voice (1, 2, or 3 hrs. per quarter.) Pr., Acceptable singing of works from MU 346.
A thorough study of song literature, including the works of Brahms, Schumann, Wolf, Schubert, and French masters. Concentration of perfecting vocal techniques on performer's level.

Organ

087-88-89. Elementary Organ (No credit).
An introduction to organ playing: Jennings, First Elements of Organ Technics. Studies for manuals and pedals. The technique of hymn-playing, Telemann, Choral Preludes.

187-88-89. Intermediate Organ (1, 2, or 3 hrs. per quarter). Pr., MU 049 or equivalent.
Technical studies for manuals and pedals. Elementary improvisation. Transcription at sight from simple piano accompaniments. Bach, short Preludes and Fugues (E Minor, G Minor); Chorale Preludes for manuals.

287-88-89. College Organ I (1, 2, or 3 hrs. per quarter). Pr., MU 149 or equivalent.
Continued improvisation and technical studies. Principles of modulation. Bach, short Preludes and Fugues, Choral Preludes from "The Liturgical Year." Reger, Chorale Preludes.

387-88-89. College Organ II (1, 2, or 3 hrs. per quarter). Pr., MU 249.
Technical equipment for organ works of more than medium difficulty. Bach, Chorale Preludes, Prelude and Fugue in E Minor, Fugue in G Minor; Mendelssohn, Second Sonata; Franck; Prelude, Fugue and Variations. Selected works by Buxtehude, Liszt, Rheinberger, Karg-Elert, Guilmant and others.

487-88-89. Advanced Organ (1, 2, or 3 hrs. per quarter). Pr., MU 349.
Senior course embracing the more difficult organ literature, such as the larger works of Bach; Mendelssohn, Preludes and Fugues, and Sonatas; Franck, Chorales, Organ Symphonies by Widor and Vierne. Modern compositions and shorter recital pieces.

Instrumental

Strings

091-92-93. Elementary Strings (No credit).
Rudiments of producing tone, bowing, fingering and scales in one octave, as found in the first position. Simple pieces and studies.

191-92-93. Intermediate Strings (1, 2, or 3 hrs. per quarter). Pr., MU 093.
Individual instruction in playing a selected instrument in strings. The student is trained in technical facility in major and minor scales, and arpeggios in all scales, and in simple solo works. For violin, such pieces will be of the difficulty of: Kreutzer Etudes, No. 1-32; the Viotti Concerto, No. 23; the deBeriot Concerti, No. 7 and 9; and the Tartini G minor Sonata. For other string instruments, pieces of a comparable level will be selected.

291-92-93. Strings I (1, 2, or 3 hrs. per quarter).
Mastery of techniques for scales and broken chords in three octaves. Continued study in solo playing. Violin etudes; Kreutzer, Fiorillo, Mazas. Pieces of medium difficulty; Mozart, Handel and Schubert sonatas. Concerti: Vivaldi, A minor, Viotti No. 22, Mozart M major, deBeriot Nos. 7 and 9.

391-92-93. Strings II (1, 2, or 3 hrs. per quarter).
Scales and broken chords at increased tempo, double stops. Etudes: Shode, Rovelli, Wieniawski. The easier Bach sonatas for violin and piano; Spohr concerti No. 2, 6, 9. All students should give evidence of ability to read at sight compositions of moderate difficulty, and should demonstrate ability in ensembles, and symphonic works.

491-92-93. Advanced Strings (1, 2, or 3 hrs. per quarter).
A thorough study of the virtuoso instrumental literature. Etudes: Wieniawski, Locatelli caprices. Bach solo sonatas, Paganini caprices. Concerti: Mendelssohn, Lalo, St. Saens.

Woodwind

094-95-96. Elementary Woodwind (No credit).
Tone production, fingering and scales in simple keys.

194-95-96. Intermediate Woodwind (1, 2, or 3 hrs. per quarter).
Training in facility and control of intonation, embouchre, phrasing and control.

294-95-96. College Woodwind I (1, 2, or 3 hrs. per quarter).
Continued study for students who have had foundational training. The student finishing this course should be able to play 1st chair parts in school bands or 2nd chair parts in school symphonies. Studies: Klose, Book 1 for clarinets; Nieman-Labate for Oboe; Pares for Flute and Weissenborn (1st half) for Bassoon.

394-95-96. College Woodwind II (1, 2, or 3 hrs. per quarter).
Further study in technical methods outlined above. Special stress on expression, and interpretation; solo passages from standard symphonic work.
Advanced study with special emphasis on training in outstanding pieces of literature;

494-95-96. Advanced Woodwind (1, 2, or 3 hrs. per quarter).
designed to prepare the student for his major Senior Recital, as well as the mastery of his instrument.

Brass

097-98-99. Elementary Brass (No credit).
Rudiments of tone production, fingering, and reading music.

197-98-99. Intermediate Brass (1, 2, or 3 hrs. per quarter).
Development of tone production and special techniques of the individual instrument; including scale and chord work in all major keys.

297-98-99. College Brass I (1, 2, or 3 hrs. per quarter).
Scales and chord work in all keys, technique exercises of medium difficulty, and some work in easy literature.

397-98-99. College Brass II (1, 2, or 3 hrs. per quarter).
Continuing techniques study involving difficult etude study, flexibility exercises, and difficult scale and chord work in all keys. Literature study of medium and medium difficult works written by the master composers.

497-98-99. Advanced Brass (1, 2, or 3 hrs. per quarter).
Continuing literature study involving the most difficult of the great works for the instrument; development of a high degree of musicianship to prepare the student for public performance.

Courses in Applied Music are open to any student of the institution upon permission of the head of the department. Courses may be taken with or without academic credit. Admission to courses on the 200, 300, and 400 levels will be granted only after the student has demonstrated fulfillment of the prerequisite by passing satisfactorily a performance test based on typical exercises and compositions selected from the preceding course.

Since achievement in music is cumulative, it will normally take three quarters of study to meet the requirements for each successive grade of execution. These requirements conform to standards established by the National Association of Schools of Music.

Each course in Applied Music with an individual instructor is based on one half-hour lesson per week for the academic quarter. Many students, however, desire two half-hour lessons per week. Such an arrangement is advantageous to the student and can be made, but it does not carry additional credit.

The amount of credit in Applied Music is based on the following practice schedule:

1 cr. hr.—4 hours weekly practice
2 cr. hrs.—8 hours weekly practice
3 cr. hrs.—12 hours weekly practice

Only MU students in the BA or BM degree curricula may receive more than 1 hour credit per quarter for each applied music course.

Applied Music Fees (Per Quarter)

One half-hour lesson per week	$20.00
Two half-hour lessons per week	30.00
Class instruction in piano, etc.	5.00
Use of practice room, one hour per day	3.00
Use of practice room, two hours per day	5.00
Instrument rental	3.00

Class Instruction in Applied Music

The Music Department offers a number of classes in Applied Music open to Music Majors and Minors and to regularly registered college students who have had previous music training. These classes meet two hours per week and carry one hour credit. Tuition fee $5.00. (Minimum of 12 students per class.)

101-2-3. Organ Class (1-1-1). (2-2-2 lec. and lab.).
Class instruction and practice in the rudiments of music as applied to organ playing.

104-5-6. Piano Class (1-1-1). (2-2-2 lec. and lab.).
Class instruction and practice in the rudiments of music as applied to piano playing. (See above for fee.)

107-8-9. Voice Class (1-1-1). (2-2-2 lec. and lab.).
Class instruction and practice in the rudiments of music as applied to piano playing. (See above for fee.)

110-11-12. String Instruments Class (1-1-1). (2-2-2 lec. and lab.).
Class instruction and practice in the rudiments of music as applied to violin, viola, cello and contrabass playing. (See above for fee.)

113-14-15. Brass Instruments Class (1-1-1). (2-2-2 lec. and lab.).
Class instruction and practice in the rudiments of music as applied to playing on trumpet, trombone and other brass instruments. (See above for fee.)

116-17-18. Woodwind Instruments Class (1-1-1). (2-2-2 lec. and lab.).
Class instruction and practice in the rudiments of music as applied to playing on clarinet, oboe, bassoon, flute and other woodwind instruments. (See above for fee.)

119. Percussion Instruments Class (1). (2 labs.)
Class instruction and practice in the rudiments of music as applied to playing percussion instruments; drums, bells, cymbals, triangles, tympani, etc. (See above for fee.)

GRADUATE COURSES

600. Music in the Culture (5).
A study of esthetic values in the contemporary scene with particular emphasis on music as it fits in the social scheme.

601-2. Advanced Musical Analysis (5-5).
A comparative study of the functional aspects of music analysis. Examples from a variety of great music literature are studied by score and recording.

603. Brass Instruments Techniques (1). Lec. 1, Lab. 3.
Course designed to work out specific problems with graduate students in furthering their knowledge of and skill on brass instruments.

604. Woodwind Instruments Techniques (1). Lec. 1, Lab. 3.
Course designed to work out specific problems with graduate students in furthering their knowledge of and skill on woodwind instruments.

605. Percussion Instruments Techniques (1). Lec. 1, Lab. 3.
Course designed to work out specific problems with graduate students in furthering their knowledge of and skill on precussion instruments.

621. Instrumental Music Literature (5).
A study through performance and listening of the great instrumental music from the Renaissance to the present to acquaint musicians with original music for the various media, including solos, small and large ensembles, string and wood.

641-2-3. Graduate Study in Applied Music (1-1-1).
Advanced private study to further the self-improvement and skill in the graduate students' performing medium. (Special fee—see under Applied Music Fees.)

661-2. Advanced Instrumental and Choral Conducting (1-1). Lec. 1, Lab. 2.
Advanced conducting skills in handling instrumental and choral groups, problems in conducting and score reading along with desirable baton techniques.

665-6. Scoring for Instruments (5-5).
Practical arranging and transcription for use in all musical situations including beginners, and marching bands. Each individual will choose his own project. May be substituted for MU 601-2.

699. Research and Thesis (credit to be arranged).

Naval Science (NS)

(List of courses will be found on page 133.)

Pharmacy (PY)†

Professors Coker, Hargreaves, Hocking, and Williams
Associate Professor Rash
Associate Research Professor Head

Pharmacy

Associate Professor Rash

101. Introduction to Pharmacy (3).
Orientation and general survey of the scope of pharmacy, its organizations and literature with a brief introduction into principles of pharmacy.

102. Pharmaceutical Arithmetic (5). Pr., MH 111-112.
Calculations necessary to the practice of pharmacy. Among the topics treated are weights and measures, specific gravity, specific volume, percentage solutions, concentration and dilution, alligation and commercial calculations.

202. Pharmaceutical Terminology (2). Pr., third year standing.
Common terms and abbreviations used in the professional and scientific aspects of pharmacy and medicine.

203. Pharmaceutical Technology (5). Lec. 3, Lab. 6. Pr., CH 105, PY 101-102.
The general properties of Galenical drugs, their preparation, extraction and preservation. The laboratory is designed to permit controlled experiments verifying fact and illustrating theory presented in lecture.

205. History of Pharmacy (3). Pr., PY 101.
A general survey of the history of pharmacy designed to provide a knowledge of the heritage of the profession.

303. Physical Pharmacy (5). Lec. 4, Lab. 3. Pr., PY 203.
Physical-chemical principles with application to pharmaceutical systems including the more modern approaches as gas chromatography, spectrophotometry, polargraphy, and electro chemical methods.

304. Pharmaceutical Technology (5). Lec. 3, Lab. 6. Pr., PY 303 or CH 316.
Official preparations are discussed with regard to their general pharmaceutical aspects with emphasis on chemistry and posology. The laboratory consists of the preparation of official and non-official products selected for the special techniques and skills involved.

308. Hospital Pharmacy Administration (3). Pr., fourth year standing.
The development of hospitals, their place in society, importance and place of pharmacy in hospitals, administrative and policy making aspects together with interdepartmental relationships.

400. Dispensing Pharmacy I (5). Lec. 3, Lab. 6. Pr., PY 304.
The compounding of prescriptions of an elementary nature, illustrating virtually all types of prescriptions.

401. Dispensing Pharmacy II (5). Lec. 3, Lab. 6. Pr., PY 400.
Advanced dispensing pharmacy and prescription laboratory. Prescriptions of an advanced nature are compounded. Special attention is given to the subject of incompatabilities.

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† Each student registered in a pharmacy course which has a laboratory in connection with it will have to purchase a laboratory punched card from Bursar's Office before he will be assigned a desk.

402. Dispensing Pharmacy III (5). Lec. 3, Lab. 6. Pr., PY 401.
Practical pharmaceutical compounding and dispensing, related to modern drug outlets. Certain aspects of drug detailing will be discussed.

409. Applied Hospital Pharmacy (3). Lec. 1, Lab. 6. Pr., PY 303, PY 400.
The application of pharmaceutical practices and procedures to hospital pharmacy.

410. Advanced Dispensing Pharmacy (5). Lec. 3, Lab. 6. Pr., PY 401.
The more complex problems in dispensing pharmacy with correlated laboratory work.

411. Survey of Pharmaceutical Manufacturing (3). Lec. 2, Lab. 3. Pr., PY 304.
Manufacturing procedures and operations. In the laboratory selected large scale production problems are carried out to completion.

412. Public and Professional Relations (3). Pr., fourth year standing.

413. Special Problems (1-3). Pr., fourth year standing.

414. Pharmaceutical Specialities (3). Pr., fifth year standing.
The more important non-official specialities available to modern prescription practice and over-the-counter sales are studied.

COURSES FOR GRADUATE STUDENTS

601. Sterile Solutions and Ampuls (3). Lec. 1, Lab. 6. Pr., PY 401.
Production of both large and small volume parentral solutions.

602. Tablet Manufacture (3). Lec. 1, Lab. 6. Pr., PY 401.
Essentials in the manufacture and coating of compressed tablets.

603. Product Development (3). Lec. 1, Lab. 6. Pr., consent of instructor.
Formulation, evaluation and materials costs of pharmaceutical and cosmetic preparations.

Pharmaceutical Chemistry

Professor Hargreaves
Associate Professor Head

201. Inorganic Pharmaceutical Chemistry (5). Pr., CH 105, 206.
The official inorganic chemicals; their manufacture, chemical properties, pharmaceutical and therapeutic uses, doses and preparations. Tests for identity and purity, together with assay methods are considered.

301. Organic Pharmaceutical Chemistry (5). Pr., PY 201, CH 207-208.
The official organic chemicals; their manufacture, chemical properties, trade names, pharmaceutical and therapeutic uses, doses and preparations.

302. Organic Pharmaceutical Chemistry (5). Pr., PY 301.
A continuation of PY 301.

305. Pharmaceutical Assay (5). Lec. 2, Lab. 9. Pr., CH 206, CH 208.
Pharmaceutical assay procedures not covered in general quantitative analysis, physical and chemical constants of fatty oils, proximate assay of vegetable drugs, official arsenic test, alcohol determination, alkaloidal chemistry and the assay of alkaloidal drugs.

403. Toxicology (5). Pr., PY 406, CH 208.
Fundamentals of the isolation, identification, symptoms and treatment of the more common poisons.

404. Chemistry of Natural Products (5). Pr., CH 208 and junior standing.
Chemistry and nomenclature of fatty oils, volatile oils, steroids, glycosides, alkaloids, antibiotics, vitamins, and other natural products.

421. Advanced Inorganic Pharmaceutical Chemistry (5). Pr., PY 201.
A critical study of the commercial aspects of chemicals of medical interest, radioactivity and the preparation, handling and use of isotopes used as diagnostic or therapeutic agents.

COURSES FOR GRADUATE STUDENTS

620-21-22. Chemistry of Synthetic Drugs (5-5-5). Pr., PY 301-2 or consent of instructor.
Historical background, pertinent literature, organic name reactions, nomenclature, relation of chemical structure and physical properties to biological activity, isosterism, metabolite antagonism, enzyme inhibition, an exhaustive consideration of the chemistry and biological activity of the various therapeutic classes.

623-24-25. Synthesis of Drugs (5-5-5). Lec. 2, Lab. 9. Coreq., PY 620-21-22 or consent of instructor.
Laboratory procedures in the synthesis of intermediates and representative compounds studied in PY 620-21-22.

626-27. Analytical and Control Methods (5-5). Lec. 3, Lab. 6. Pr., PY 305 or consent of instructor.
An extensive study of the principles and techniques of analysis as applied to the various therapeutic classes.

628. Steroid Chemistry (5). Pr., PY 620 or consent of instructor.
Structure determination, chemistry, synthesis and structure relationships of steroids of pharmacological and pharmaceutical importance.

629. Alkaloid Chemistry (5). PY 620 or consent of instructor.
Structure determination, chemistry and synthesis of alkaloids with emphasis on the alkaloids of pharmacological and pharmaceutical importance.

Pharmacology

Professors Coker and Williams

300. Public Health (5). Pr., VM 200, VM 204.
Common communicable diseases including the course and symptoms of the disease, the causative agents, mode of transmission, and control measures including hygienic and sanitation measures as well as immunization procedures. A survey of Federal and State Health agency activities is included.

309. Pharmacology I (5). Lec. 4, Lab. 3. Pr., ZY 101-102, CH 301.
The essentials of anatomy and physiology including a brief consideration of elements of histology and embryology with an introduction to pharmacodynamics as related to these sciences.

310. Public Health (3). General elective. Pr., junior standing.
A non-technical survey of the common communicable diseases including the causative agents modes of transmission and symptoms. Hygienic, sanitation and immunization control measures are discussed along with the roles of Federal and State Health agencies. (Not open to pharmacy majors.)

405. Pharmacology II (5). Lec. 4, Lab. 3. Pr., PY 309.
A pharmacological study of the official and more important non-official drugs. Absorption and fate, mechanism of action, pharmacochemical relationships and toxicology, together with a brief coverage of pathological conditions indicating specific uses in therapy are main considerations.

406. Pharmacology III (5). Lec. 4, Lab. 3. Pr., PY 405.
A continuation of PY 405. Topics for consideration are the vitamins, hormones, biologicals and antibiotics with major emphasis on endocrine products and deficiency states as related to specific therapy.

407. Chemotherapeutic Drugs (3). Pr., PY 406.
Structure, action relationship of drugs and their use in inhibiting or destroying microorganisms.

430. Pharmacological Techniques (5). Lec. 4, Lab. 3. Pr., PY 309 and junior standing.
Principles and techniques of surgical procedures used in drug testing with animals, including preparation of the animal, asepsis, and care of surgical instruments.

431. Pharmacology IV (5). Lec. 4, Lab. 3. Pr., PY 405-6 and junior standing.
Cellular pharmacology including a study of its basis in cytology.

432. Fundamentals of Bionucleonics (3). Lec. 2, Lab. 3. Pr., PS 206 or consent of instructor and junior standing.
Theoretical and practical application of trace level radioactivity for research, application to pharmacy and allied sciences.

COURSES FOR GRADUATE STUDENTS

631. Advanced Pharmacology (5). Pr., PY 430-31.
Advanced pharmacodynamics with emphasis on mechanism of action of drugs affecting the nervous system.

633. Bioassay (5). Lec. 3, Lab. 6. Pr., PY 430 and suitable course in statistics.
Principles and techniques of bioassay with primary attention to official bioassay methods.

637. Pharmacology Seminar (3). Pr., PY 430.

Pharmacognosy

Professor Hocking

306. Pharmacognosy I (5). Lec. 4, Lab. 3. Pr., BY 205, CH 301.
A study of crude plant and animal drugs, their medicinally active constitutents, including morphology, phytochemistry, biosynthesis, and applications.

307. Pharmacognosy II (5). Lec. 4, Lab. 3. Pr., PY 306.
A continuation of PY 306 including testing and assaying of natural products.

440. Histology of Natural Products (3). Lec. 2, Lab. 3. Pr., consent of instructor.
Micro-chemical, micro-analytical, and micro-sectioning techniques, including methods of fixation, dehydration, embedding, and staining tissues in the preparation of permanent mounts on microslides, with use of microtome and micro-dissection techniques.

441. Commercial Pharmacognosy (3). Pr., consent of instructor.
Commercial aspects of crude drugs, both wild and cultivated, foreign and domestic; composition and application of pesticides.

COURSES FOR GRADUATE STUDENTS

640. Advanced Pharmacognosy (5). Lec. 3, Lab. 6. Pr., PY 307 or equivalent.
Comprehensive study of both official and unofficial crude drugs conducted macroscopically and microscopically; techniques of use of camera lucida, microtome, and microphotographic equipment; pharmacognosy of previously undescribed drugs.

641. Advanced Microanalysis (5). Lec. 2, Lab. 9. Pr., permission of instructor.
Techniques of microchemistry and microanalysis of crude plant and animal drugs.

642. Histology of Medicinal Plants (5). Lec. 3, Lab. 6. Pr., PY 440.
Microscopic structure of medicinal plants in fresh or preserved state as related to the origin and fate of plant compounds.

699. Research and Thesis (5).

Pharmacy Administration

204. Drug Marketing (3). Pr., EC 200.
Basic principles of marketing drug products from the manufacturer to the consumer.

408. Pharmaceutical Economics (5). Pr., EC 200, EC 211.
The elements of drug store management; drug store layout, buying, sales production, salesmanship, merchandising, and other affiliated considerations in the successful operation of a retail drug store.

415. Pharmaceutical Jurisprudence (2). Pr., fourth year standing.
Covers legal aspects of pharmaceutical practice, giving primary consideration to State and Federal regulations bearing thereon; including Alabama State Practice Act, Harrison Anti-Narcotic Act, and Food and Drug Regulations of the Federal Government.

Philosophy (PA)

Professor John Henry Melzer
Assistant Professors Gunter, McKown, and Owsley

These courses introduce the student to the fundamental ideas upon which our civilization is based and encourage him to investigate the meaning of these ideas for individual and group living. A student who wishes to minor in Philosophy must elect two historical philosophy courses and one other five hour course. A student who wishes to major in philosophy must include the following courses in his curriculum: PA 302, PA 307 or 308, PA 320, PA 410, PA 420, PA 430, one course in history numbered 400, and two five hour courses in psychology.

301. Introduction to Philosophy (3). General elective.
An introductory survey of the basic philosophical problems underlying western civilization.

302. Introduction to Ethics (3). General elective.
An introduction to the general principles of morality as applied to human conduct.

307. Scientific Reasoning (5).
A general course in the principles of logical reasoning used by scientists and others. (Not open to students with credit in PA 308.)

308. Introduction to Logic (3). General elective.
Designed to acquaint the student with the principles of logical thinking with emphasis upon contemporary scientific procedures. (Not open to students with credit in PA 307.)

310. Eastern Religious Thought (3).
Readings from both primary and secondary sources related to Hinduism, Jainism, Buddhism, Taoism, Confucianism, Shintoism, and Sikhism.

315. Western Religious Thought (3).
Readings from both primary and secondary sources related to Ancient Egyptian, Mesopotamian, and Greek religions, Judaism, Zoroastrianism, Christianity, and Islam.

320. Formal Logic (5).
An extended treatment of symbolic logic. (PA 308 is desirable but not necessary for this course.)

325. Aesthetics (5).
Inquiry into the history of aesthetic theory made with a view of determining foundations of critical reflection on the arts of literature, drama, painting, sculpture, architecture, and music.

330. Philosophy of Religion (5).
A philosophical examination of religious ideas including such topics as the origin of religion; the nature of religion; the various concepts of God, the soul, immortality; and internal and external criticisms of religion.

350. Philosophy of Science (5). Pr., junior standing.
A study of the implications for human values of some important concepts and methods in the social and natural sciences.

360. The Philosophy of Communism (5).
Primarily a study on the theory, practice, and social motivation of Marxism, but with some additional studies in peripheral areas.

410. Ancient and Medieval Philosophy (5). Pr., junior standing.
Philosophical thought of ancient Greece and Rome, and of medieval Christendom.

420. Modern Philosophy (5)., Pr., junior standing.
Philosophical though from Descartes through Kant.

430. Contemporary Philosophy (5). Pr., junior standing.
Philosophical thought from James through the present time.

440. American Philosophy (5). Pr., junior standing.
American philosophical thought from colonial times to William James.

650. Seminar (5). Pr., PA 410, 420, 430, or 440, and permission of instructor.
The content will change for each quarter in any one calendar year. This will vary from movements of thought to an intensive study of one of the great thinkers such as Plato or Whitehead.

Physics (PS)

Head Professor Carr
Professor Hughes
Associate Research Professors Budenstein and Louck
Associate Professors Latimer, Shewell, and Sparks
Assistant Professors Askew, Crafts, French, and Harlan
Instructors Orr, Ward, and Wood
Graduate Assistants Cress, Patrick, Schneider, Smith, and Wills

The significant contributions of physics to the advancement of modern industry and technology are reflected in a marked demand for well-trained scientists in this field. Opportunities for a career in this science are to be found in the increasingly active industrial and governmental laboratories as well as on the teaching and research staffs of the colleges and universities. The Curriculum in Physics (see page 143) is recommended to those who contemplate a career in teaching and research, while the Curriculum in Applied Physics, (see page 144) should appeal to those whose interests lie primarily in the applied aspects of the subject. The course offerings also provide foundational training for students in chemistry and engineering. In addition, service courses are offered to meet the needs of students enrolled in agriculture, architecture and building construction, education, forestry, home economics, industrial management, pharmacy, pre-dentistry, pre-medicine, pre-veterinary medicine, and arts and sciences.

Good laboratory and library facilities are available for advanced studies and research in several fields of modern and classical physics. Current research activities include experimental studies of photonuclear interactions, Beta- and gamma-ray scintillation spectrometry, cosmic radiation, radiation damage, crystal imperfections, ultrastructure by means of electron microscopy and X-ray diffraction, optical properties of biophysical media, Mossbauer effect, quadrupole focusing of positive and negative ions, and magneto-optics. In addition theoretical investigations are presently being conducted in molecular physics, operational methods in quantum mechanics, classical mechanics, classical and quantum mechanical statistics, and crystal imperfections.

201. General Physics—Mechanics (5). Lec. 4, Lab. 3. Pr., MH 201 or 262 (or concurrently).
The first of three quarters in a basic physics course comprising PS 201-202-203. The concepts of classical physics are developed and emphasis is placed upon the solution of problems. A series of selected quantitative experiments is performed in the three-hour weekly laboratory periods. For students in chemistry, engineering, physics and engineering physics.

202. General Physics—Heat, Sound, and Light (5). Lec. 4, Lab. 3. Pr., PS 201; MH 202 or 263 (or concurrently).

203. General Physics—Electricity and Magnetism (5). Lec. 4, Lab. 3. Pr., PS 201; MH 202 or 263 (or concurrently).

204. Survey Course in Physics (5). Pr., PS 201 or 205 excludes credit for this course.
The instruction will be conducted around discussions of problems in the effort to develop an intelligent view of the general field of physics within the limits of a one-quarter course. For students in aeronautical administration; agriculture; agricultural and industrial arts education and industrial design.

205. Introductory Physics—Mechanics and Heat (5). Lec. 4, Lab. 3. Pr., MH 112 or 160.
The first half of a two-quarter course in the fundamentals of physics. The quantitative as well as the qualitative aspects of the subject are stressed. For students in architecture, forestry, laboratory technology, pharmacy, pre-dentistry, pre-medicine, pre-veterinary, medicine, industrial management, and science and literature. The weekly three-hour laboratory periods are devoted to the performance of appropriate experiments.

206. Introductory Physics—Electricity, Sound and Light (5). Lec. 4, Lab. 3. Pr., PS 205.
Continuation of PS 205.

207. Physics for Home Economics Students (5).
Designed primarily to give the student an understanding of physical principles as they relate to home economics.

210. Pre-Medical Physics (5). Lec. 4, Lab. 3. Pr., PS 206.
An introduction to modern physics, including atomic structure, nuclear physics, x-rays, and special relativity.

217. Astronomy (3). General elective.
A brief course in descriptive astronomy, accompanied by occasional observations of the heavenly bodies with a three-inch refracting telescope.

301. Intermediate Electricity and Magnetism (5). Lec. 4, Lab. 3. Pr., PS 203, MH 202 or 264.
Phenomenological development of classical electricity and magnetism leading to the formation of Maxwell's equations. Topics include: laws of Coulomb, Gauss, Ampere, and Faraday; properties of dielectric and magnetic media, a.c. circuit theory, Maxwell's displacement current, and an introduction to plane waves.

302. Electronics (5). Lec. 4, Lab. 3. Pr., PS 301.
Simple alternating current theory. Theory of vacuum and gas-discharge tubes and their circuits. Thermionic emissions, space-charge phenomena, and electron ballistics. Grid-controlled tubes and circuit analysis. Voltage and current amplifiers; feedback theory. Simple computing circuits. Appropriate laboratory exercises form a part of the course.

303. Optics (5). Lec. 4, Lab. 3. Pr., PS 202, MH 202 or 264.
An intermediate course in physical optics comprising wave motion, reflection, refraction, dispersion, origin of spectra, interference, diffraction, and polarization, with appropriate laboratory experiments.

304. Applied Spectroscopy (5). Lec 4, Lab. 3. Pr., PS 202, MH 202 or 263.
A survey of the more important concepts of the origin of spectra; a study of instruments and techniques of practical spectroscopy. Laboratory experiments designed to give students in both Chemistry and Physics a working knowledge of spectroscopy as a tool.

305. Introduction to Modern Physics (5). Lec. 4, Lab. 3. Pr., PS 202-203, MH 202 or 264.
Introduction to selected topics of modern physics, including atomic structure, X-rays, classical and quantum statistics, quantum mechanics, special relativity, and nuclear physics.

401. Theoretical Physics I—Mechanics (5). Lec. 4, Prob. 2. Pr., junior standing, PS 203, MH 361.
Newton's laws; systems of particles; conservation laws; free, damped, and forced oscillations; introduction to calculus of variations.

402. Theoretical Physics II—Mechanics Continued (5). Lec. 4, Prob. 2. Pr., junior standing, PS 401.
Calculus of variations; Hamilton's Principle and Lagrange's equations; vibrating systems; vector analysis; dynamics of rigid bodies.

403. Theoretical Physics III (5). Lec. 4, Prob. 2. Pr., PS 301, PS 402, junior standing.
Introduction to electromagnetic theory using the mathematics of vector fields. The physical interpretation of the different fields is stressed.

404. Thermodynamics (5). Pr., junior standing, PS 202-203, MH 264 or 301.
Equations of state. First and second laws of thermodynamics. The absolute temperature scale; the entropy, free energy, and Gibbs potential; general conditions of equilibrium. Application to reactions in gases and dilute solutions. Nernst's postulate.

405. Nuclear Physics (5). Lec. 4, Lab. 3. Pr., junior standing, PS 305, MH 264 or 301.
Nuclear radiations; transmutations; natural and artificial radioactivity; binding energy; nuclear forces; structure of the nucleus; nuclear fission and its applications. Appropriate laboratory experiments form a part of the course.

409. Introduction to Reactor Physics I (5). Lec. 4, Lab. 3. Pr., junior standing, PS 305, MH 402, or permission of instructor.
A brief account of nuclear physics; basic instrumentation; interaction of neutrons with matter; chain reactions; neutron diffusion; the bare homogeneous thermal reactor; lattice constants; reactor kinetics.

410. Introduction to Reactor Physics II (5). Lec. 4, Lab. 3. Pr., junior standing, PS 409.
Homogeneous reactor with reflector; reactor control; power reactors; thermal aspects of reactor systems; design variables; radiation detection and measurement; shielding; radiation hazards.

413. Introduction to X-ray Crystallography (5). Lec. 4, Lab. 3. Pr., junior standing, PS 305, or permission of instructor.
Principles of crystallography, properties of x-rays, Laue and powder techniques, applications to crystal structure and grain size.

414. Electron Optics and Microscopy (5). Lec. 3, Lab. 6. Pr., junior standing and PS 203 and MH 264.
Electron optics; theory and operation of the electron microscope; techniques of mounting, replication and shadowing of specimen; electron diffraction, theory and interpretation of patterns. Demonstration experiments and laboratory exercises constitute the experimental portion of the course.

421. Advanced Electronic Circuits (5). Pr., junior standing, PS 302.
Advanced network and feedback theory; voltage regulators, oscillators; pulse and sweep generators; electronic instruments.

430. Physics for High School Teachers I (4). Lec. 3, Lab. 3. Pr., PS 204 or equivalent, junior standing.
A study of the fundamental laws in mechanics, heat, and sound with particular emphasis upon such broad priniciples as Newton's laws of motion, the conservation of energy and momentum, and the transfer of energy.

431. Physics for High School Teachers II (4). Lec. 3, Lab. 3. Pr., PS 430, junior standing.
A study of the fundamental laws in light, electricity, magnetism, and an introduction to some basic phenomena in atomic, molecular, and nuclear physics.

435. Introduction to Solid State Physics (5). Pr., MH 361, junior standing.
A survey of solid state phenomena including lattice vibrations, band description of electronic states in metals, semiconductors and insulators, and magnetic phenomena.

470. Health Physics (5). Lec. 4, Lab. 3. Pr., permission of the instructor, junior standing.
Fundamental principals of radioactivity; instrumentation for detecting and monitoring radioactive nuclides; radiation effects on man; permissible radiation dosages; safe handling of radioactive substances; and shielding from various radiations.

GRADUATE COURSES

601. Advanced Dynamics I (3). Pr., PS 402.
D'Alembert's principle; introduction to the calculus of variation; Hamilton's priniciple and Hamilton's equations; principle of least action.

602. Advanced Dynamics II (3). Pr., PS 601.
Canonical variables and contact transformations; the Hamilton-Jacobi equation; action angle variables; Poisson brackets; continuous systems.

603. Mechanics of Continuous Media (3). Pr., PS 602.
Introduction to the theories of elasticity and fluids.

604-5-6. Theory of Electricity and Magnetism I-II-III (3-3-3). Pr., PS 403, Coreq., MH 607-8-9.
Maxwell's formulation of classical electronmagnetic theory. Includes electrostatics, magnetostatics, potential problems, electric currents, Maxwell's equations, electronmagnetic waves, radiation theory, boundary value problems.

607. Physical Optics (3). Pr., PS 606.
Application of Maxwell's equations to optical phenomena including Kirchoff's formulation, propagation of electromagnetic waves in anisotropic media, double refraction, dispersion.

617. Modern Physics I (3). Pr., PS 305, MH 404, or permission of instructor.
Special theory of relativity; quantum mechanics with applications.

618. Modern Physics II (3). Pr., PS 617 or PS 641, or permission of instructor.
Atomic and molecular spectra, quantum statistics; band theory of solids; x-rays.

619. Modern Physics III (3). Pr., PS 617 or PS 641, or permission of instructor.
Nuclear physics, particles.

628. Statistical Mechanics I (3). Pr., PS 404, 601.
Statistical ensembles in classical mechanics, the Maxwell-Boltzmann distribution law. Boltzmann's H theorem, and an introduction to quantum statistical mechanics.

629. Statistical Mechanics II (3). Pr., PS 628.
Quantum mechanical H-theorem, applications, introduction to non-equilibrium statistical mechanics.

630. Modern Physics for High School Teachers (5). Lec. 4, Lab. 3. Pr., junior standing, PS 431 or equivalent, MH 487 or equivalent.
A survey of developments in physics since 1890 including: structure of matter; atomic and molecular spectra; x-rays, natural and induced radioactivity; nuclear fission and fusion; and cosmic rays.

632. Special Theory of Relativity (3). Pr., PS 602, PS 605.
Relativistic mechanics, covariant formulation of Maxwell's field equations, Lagrangian and Hamiltonian formulation of fields.

635. Solid State Physics (3). Pr., PS 435, PS 643.
Quantum mechanical description of lattice vibrations and electrons in solids. Interaction between the electrons and crystalline lattice.

639. Directed Reading in Physics (2). Pr., Permission of instructor. May be taken more than once.

641. Quantum Mechanics I (3). Pr., PS 402.
Uncertainty principle; Schroedinger's equation; one-dimensional problems; operator formalism; angular momentum.

642. Quantum Mechanics II (3). Pr., PS 641.
Central forces; matrix representations; approximate methods; particle in electromagnetic field.

643. Quantum Mechanics III (3). Pr., PS 642.
Spin; identical particles; Pauli principle; applications.

644-5. Advanced Quantum Mechanics I-II (3-3). Pr., PS 632, PS 643.
Advanced theory of angular momentum with applications to atomic and nuclear spectra, relativistic theory of quantum mechanics, the Dirac electron, introduction to field theory.

653. Seminar in Physics (2). Pr., Permission of instructor. May be taken more than once.

655. Special Topics in Theoretical Physics (3). Pr., Permission of instructor.
Choice of topic will vary but will include: relativity theory; group theory; atomic and molecular structure; elasticity; fluid mechanics; quantum field theory; low temperature physics. May be taken more than once.

661. Nuclear Structure (3). Pr., PS 405.
Selected topics on properties of nuclei.

691. Directed Reading in Contemporary Physics. Credits to be arranged. Pr., completion of 30 hours of advanced courses in physics. May be taken more than one quarter.

699. Research and Thesis. Credit to be arranged.

799. Research and Dissertation. Credit to be arranged.

Poultry Science (PH)

Professors Cottier, Edgar, and Moore
Associate Professors Goodman, Johnson, and Mora
Assistant Professor Howes

Work in this department is designed to provide training in the business and fundamental aspects of poultry science. The courses cover the field of feeding, breeding, marketing, incubation, brooding, diseases, parasites, and management. The undergraduate work is planned to meet the needs of students who expect to enter any of the various phases of the poultry industry or become specialists, county agents, vocational agricultural teachers or enter graduate work. The graduate work offered by the department allows students to prepare for positions such as extension specialists, college teachers and research workers. A fixed poultry science major is designed to prepare the student for work in production or related industry positions after completion of his B.S. degree.

Those students who desire to prepare for graduate work leading toward the Master of Science and Doctor of Philosophy degrees will be allowed to substitute freely in the poultry science curriculum to emphasize the more basic science areas.

202. Veterinary Poultry (5). Lec. 4, Lab. 2. Spring. Cottier
A study of the principles of poultry production and their application to students in Veterinary Medicine.

301. General Poultry Husbandry (5). Lec. 4, Lab. 2. Fall, Winter, Spring, Summer. Goodman
Principles of poultry production and their application to general farm conditions, including breeding, feeding, housing, diseases, and culling.

302. Poultry Meat Production (3). Lec. 2, Lab. 2. Fall. Pr., PH 301. Goodman
The practical problems involved in raising broilers, capons, and turkeys for meat production.

404. Poultry Management (5). Lec. 4, Lab. 2. Winter. Pr., PH 301 and junior standing. Cottier
Poultry problems and management of commercial flocks.

405. Poultry Feeding (3). Fall. Pr., PH 301 and junior standing. Cottier
The composition and use of poultry feeds in connection with the demands for growth, body maintenance, and egg production.

406. Incubation and Brooding (3). Lec. 2, Lab. 2. Winter. Pr., PH 301 and junior standing. Goodman
Embryology of the chick, theory and practice of incubation and brooding.

407-09. Poultry Problems (3-3). Lec. 1, Lab. 4. Pr., 12 hours PH courses and junior standing. All quarters. Staff
Investigation on some phase of poultry work.

408. Poultry Diseases and Parasites (5). Lec. 4, Lab. 2. Winter. Pr., PH 301 and junior standing. Cottier
The prevention, diagnosis, control, and treatment of the common diseases and parasites of poultry, designed especially for Agriculture students.

410. Poultry Breeding (3). Lec. 3. Spring. Pr., PH 301, ZY 300, and junior standing. Johnson
The physiology of reproduction and inheritance of various poultry characters responsible for efficient egg and meat production and low mortality.

411. Poultry Marketing (3). Lec. 2, Lab. 2. Spring. Pr., PH 301 and junior standing. Goodman
Grading eggs and poultry and study of problems of poultry marketing.

412. Commercial Poultry Management (3). Lec. 4. Pr., graduate standing. Staff
A study of the management practices and principles used in the business of producing market eggs, hatching eggs, broilers, and turkeys. (Credit for both PH 404 and PH 412 may not be used in meeting requirements for the Master's degree.)

413. Poultry Sanitation and Diseases (3). Lec. 4. Pr., graduate standing. Staff
A study of recommended sanitation practices and the prevention and control of common diseases and parasites of poultry. (Credit for both PH 408 and PH 413 may not be used in meeting requirements for the Master's degree.)

422. Avian Diseases (5). Lec. 4, Lab. 2. Fall. Cottier
This course deals with the diagnosis, treatment, and prevention of infectious and parasitic diseases. Clinical and autopsy demonstrations are performed during laboratory periods. (For Veterinary students only.)

GRADUATE COURSES

604. Advanced Poultry Production (5). Lec. 5. Spring. Cottier
Advanced studies on various phases of poultry production.

606. Advanced Poultry Breeding (5). Lec. 4, Lab. 2. Fall. Johnson
Advanced studies of the principles of heredity as applied to poultry breeding.

607. Advanced Poultry Problems (5). All quarters. Staff
Study of assigned problems.

608. Seminar. Credit to be arranged. Fall, Spring, Winter, Summer. Staff
Study of literature in Poultry Husbandry and other fields related to poultry. Emphasis will be given to the preparation, organization and presentation of research material by students and to reporting of current literature in the field. Designed for seniors in Poultry or Animal Husbandry as well as graduate students.

610. Advanced Poultry Nutrition (5). Lec. 5. Summer. Howes
An advanced study of the nutrients, their function and the nutritional requirements of poultry.

611. Advanced Poultry Management (5). Lec. 5. Summer. Cottier
An advanced study of the principles of management of commercial poultry flocks.

612. Advanced Poultry Diseases (5). Lec. 1, Lab. 8. Spring. Pr., PH 408 or consent of instructor. Edgar
Isolation, cultivation, and identification of bacterial, fungal, and viral agents. Emphasis on biochemical aspects of microbial and nutritional diseases and the mechanisms of the immune response.

613. Advanced Poultry Diseases (5). Lec. 1, Lab. 8. Summer. Pr., VM 418 and PH 612, or equivalent. Edgar
A continuation of PH 612 with emphasis on those disease conditions caused by protozoa, helminths, and arthropods and the gross and histo pathology of diseases studied in both quarters.

614. Immunochemistry (5). Lec. 3, Lab. 4. Fall. Pr., General bacteriology, immunology and organic or biochemistry. Mora
An advanced study of the fundamental principles of immunology including specificity, antibody synthesis and the thermodynamics of antigen-antibody reactions. Laboratory will include the use of immunodiffusion, immunoelectrophoresis, fluorescent-antibody technique, and quantitation of the precipitin reaction.

615. Avian Physiology (3). Fall. Pr., ZY 424 and organic chemistry. Howes
A study of the general physiology of birds with particular reference to domesticated species.

625. Digestive and Renal Physiology (4). Spring. Pr., ZY 424 and organic chemistry. Howes
A review of the digestive and renal physiology of mammalism and avian species with special reference to body fluid homeostasis.

699. Research and Thesis. Credit to be arranged. All quarters. Staff
Technical laboratory problems related to poultry.

799. Doctoral Research and Dissertation. Credit to be arranged. All quarters. Staff

Psychology (PG)

Head Professor Spears
Professor McIntyre
Associate Professor Mayer
Assistant Professors Johnson and Kelley
Instructor Sanders

A psychology major on the undergraduate level earns the Bachelor of Arts degree which provides him with a broad base for further study in the field. A student who earns the Master's degree in psychology may be prepared for additional graduate work or for service in vocations such as psychometry, school psychology, personnel work in business and industry and research technician.

101. Orientation: Personal and Professional (5). Fall. Staff
Personal and professional orientation through reading improvement, individual guidance, library instruction, and analysis of the fields of Psychology.

211. General Psychology (5). All quarters. Staff
An introduction to the scientific study and interpretation of human behavior. Consideration of such topics as learning, motivation, emotion, intelligence, perception, personality, and inter-personal relationships will be undertaken.

213. Growth and Development of School Age Children (5). Staff
The physical, psychological, and social developments of children in grades one to twelve with emphasis on environmental contributions to development. (Not open to students with credit in PG 345 or PG 447.)

214. Educational Psychology (5). All quarters. Pr., PG 213. Staff
A study of the development of the individual during the school years from the standpoint of physical growth and mental growth with special attention to the relationship of the school and the individual's concept of learning, attitude, personality, and mental health.

301. Promoting Optimum Development (5). Pr., PG 214. Staff
An examination of concepts of psychological maturity and ways of aiding its development in classrooms.

310. Reading Improvement (3). Lec. 1, Lab. 4. General elective. (Not open to students with credit in PG 101.) Staff
A thorough diagnosis of each individual student's present degree of efficiency in the reading process; to design an individual program of improvement for each student.

311. The Behavior of Man (3). General elective. Staff
The humanistic aspects of general psychology emphasizing theory and principles of the science of the behavior of man. Includes topics such as: individual differences, motivation, world of form and space, personality in a social environment, and the assessment of man. (Not available to students who have taken PG 211. May be used as prerequisite for PG 325, PG 330, PG 345.)

325. Psychology of Personality (5). Pr., PG 211 or departmental approval. Mayer
An examination of the nature of personality adjustment with special emphasis on development factors. Topics to be considered are motivation, theories of adjustment, the defense mechanisms, the evaluation of personality, and mental hygiene.

330. Social Psychology (5). Pr., PG 211. Mayer
Effects of the group upon individual and social behavior. A study of the biological antecedents of social behavior; leadership; attitudes; suggestions; institutions; and social conflict.

340. Psychometric Methods (5). Pr., PG 211 and MH 127 or departmental approval. Kelley
The arrangement and treatment of psychological data, application of techniques of data treatment to various psychological areas. Laboratory work in the analysis of experimental data.

345. Child Psychology (5). Pr., PG 211. Johnson, Mayer
The physical, psychological, and social development of the child and the relation of the child's environment to his development. Special problems of child training in the family and of social adjustment at school will be discussed. (Not open to students with credit in PG 213.)

360. Applied Psychology (5). Staff
A survey of the contributions of psychology to the fields of advertising, consumer research, selling, medicine, education, law and clinical practice and other professions.

410. Advanced Psychology (Principles of Behavior) (5). Pr., PG 211, junior standing. Kelley, McIntyre
A detailed and systematic examination of the priniciples underlying the basic psychological processes of development; perception, learning, thinking, emotion, and motivation.

414. History of Psychology (5). Pr., 5 hours of Psychology, junior standing. Mayer
The historical development of modern psychology. The course deals with the nature of the psychological problems that have been raised at different periods and the attempts at solution of these problems.

420. Experimental Psychology (5). Lec. 2, Lab. 6. Pr., PG 211 and PG 340 or departmental approval, junior standing. Kelley
Methods, techniques, and materials required in experimentation in learning, memory, and thinking. The laboratory work is designed to illustrate the basic principles in psychology and give the student first-hand opportunity to study an individual or group of individuals relative to psychological processes.

430. Integration of Behavior (5). Pr., PG 211 or PG 212, junior standing. Staff
An integration of psychological concepts and information in areas such as leadership, personality, group interaction, and learning in relation to problems of people and problems of working with people.

434. Mental Hygiene (5). Pr., 5 hours of Psychology, junior standing. Mayer
An extended study of adjustment problems, techniques of adjustment, case studies, procedures in diagnosis, and treatment.

435. Abnormal Psychology (5). Pr., junior standing, 10 hours of Psychology including PG 211. Staff
This course covers various abnormal forms of behavior, with reference material drawn from clinical sources. Problems of interest to the social worker and criminologist will receive attention. Field trips when possible will be taken.

445. Comparative Psychology (5). Pr., 10 hours of Psychology, junior standing. Kelley
Principles of behavior in infra-human organisms, with emphasis upon vertebrates. Special attention given to experiments on motivation, innate behavior, learning, retention and problem solving.

446. Physiological Psychology (5). Pr., junior standing, 10 hours of Psychology. Kelley
A study of the physiological mechanisms underlying certain of the basic behavioral processes accompanying sensation and emotions.

447. Adolescent Psychology (5). Pr., junior standing, PG 211 and PG 345 or departmental approval. Johnson, Mayer
A continuation of PG 345 covering development and maturation during adolescence with emphasis on the problems of the adolescent's adjustment to his personal and social environment, with special applications to family and school life. (Not open to students with credit in PG 213.)

455. Psychological Tests and Measurements (5). Lec. 3, Lab. 4. Pr., junior standing, PG 211, MH 107, PG 340, or departmental approval. Johnson, Mayer
A survey of the field of psychological examination and measurement, covering the testing of various aptitude, intelligence, personality characteristics and interests. Laboratory work will involve practice in giving, scoring, and interpretation of tests and other techniques.

461. Industrial Psychology (5). Pr., junior standing. McIntyre
A survey of the uses of Psychology in business and industry. The course will include projects in personnel selection and classification, familiarization with tests commonly used in industry; management of men on the job, their training, efficiency, morale, attitudes, and achievement. Practical, quantitative, psychological research techniques used in personnel work will be demonstrated.

462. The Psychology of Training and Supervising Industrial Personnel (3). Pr., junior standing. McIntyre
Application of the principles of learning to the training of factory, office, and sales employees. Utilization and evaluation of training devices. Psychological techniques in foreman training. The Training Within Industry programs such as Job Instruction Training, Job Methods Training, and Job Relations Training will be demonstrated and discussed from the psychological viewpoint.

463. The Psychology of Interviewing and Classifying Industrial Personnel (3). Pr., junior standing. McIntyre
Principles of interviewing, learning how to interview, training interviews, and field investigation. Interviewing in industrial situations, employment and upgrading, occupational adjustment, industrial counseling, oral examining in civil service agencies, and employer-employee disciplinary and exit interviews. Introduction to the Dictionary of Occupational Titles will also be included.

490. Special Problems in Psychology (3 to 8). Pr., junior standing, departmental approval. Staff
An individual problems course. Each student will work under the direction of a staff member on some experimental or theoretical problem of mutual interest.

GRADUATE COURSES

601. Enhancing Human Development (5). Staff
An examination of concepts such as the normal personality, the open person, the process person, and optimum development with emphasis on school and other environmental influences in their development.

610. Modern Viewpoints in Psychology (5). Mayer, McIntyre
An integration course examining a number of viewpoints in psychology, including structuralism, behaviorism, functionalism, purposive psychology, Gestalt psychology, and psychoanalysis.

611. Advanced Psychometric Methods (5). Pr., MH 127, PG 340, PG 420, PG 455, or permission of the instructor. Spears
A continuation of PG 340 which includes statistical theory of error and measurement, indices of reliability and validity, norm development, and other research tools and techniques.

615. Design of Experiments (5). Pr., PG 611. Spears
Construction of theory and the formulation of empirical generalizations in terms of logical and statistical advantages and limitations in experimental design.

617. The Psychology of Learning (5). Johnson, Kelley, Spears
A study of the problems and theories of learning with emphasis on individual differences.

620. Advanced Experimental Psychology (5). Lec. 2, Lab. 6. Johnson, Kelley
Experimental investigation illustrating basic problems in the field of maturation, fatigue, reflex action, emotion, learning and social functions.

631. Advanced Social Psychology (5). Mayer
An evaluation of the various theories explaining social behavior. Consideration and performance of experiments in the field of attitude, prestige and suggestion, social climate, and propaganda.

634. Advanced Mental Hygiene (5). Mayer
Emotional satisfactions and adjustment mechanisms of children and adolescents. Behavior disorders and meliorative action for promoting favorable physical, intellectual, social, and emotional growth during formative years, including emphasis on complex personality factors.

637. Advanced Abnormal Psychology (5). Staff
Continuation of Psychology PG 435 with emphasis on case studies and the classification of abnormal groups. Field trips will be taken when possible.

651. Research Studies in Psychology (5). Staff
Study on a problem by using research techniques. The problem will be selected in consultation with the professor who will supervise the study. The problem should be one which will contribute to the program of the student.

654. Individual Testing (5). Lec. 3, Lab. 4. Pr., 20 hours in Psychology including PG 455. Mayer
The theory and practice of measurement of intellectual performance in the individual. Students will be permitted to select either the Binet or Wechsler for practice, depending upon their interests.

655. Construction and Evaluation of Tests (5). Mayer, Spears
Theory of test construction; construction of test items; item analysis; reliability; methods of test validation; the combining of tests into batteries.

656. Advanced Psychological Measurements (5). Pr., PG 455, PG 654 or departmental approval. Mayer
The nature, administration, and use of complex psychometric instruments in the areas of intelligence, performance, and personality.

671-2. Projective Theory and Techniques I & II (5-5). Pr., departmental approval. Staff
Intensive study of the foundation and theory of projective diagnosis in clinical psychology. Supervised practice in administering, scoring and interpreting projective tests; intensive case study work. Emphasis is placed upon interpretation of the tests in reference to different personality structure and diagnoses of these differences.

690. Seminar (1-5). Staff
Course may be repeated for a total not to exceed 10 hours credit.

699. Research and Thesis. Credit to be arranged. Staff

Religious Education (RE)

301. Religion and Modern Thought (3). General elective.
A course dealing with the relation between the philosophical foundations of Christianity and modern thought in other fields.

303. Christian Ethics (5).
The application of Christian Ethics to current problems, the relationship of Christian and personal ethics, and other phases of the science of right conduct and morals are brought out in the course.

304. The Bible as Literature (5).
A survey of the types of literature in the books of the Bible, including reading and study of selected examples of different forms of poetry and prose, and observation of the religious truths and spirit of each selection. Consideration of the influence of the Bible on modern literature will be noted.

305. Comparative Religions (3). General elective.
A study of the principal readings of the world, including readings in the history and literature of the people whose religions are discussed.

306. Studies in the Gospels (3). General elective.
A study of the characteristics of the Gospels and the harmony among them.

307. History of the Christian Church (3). General elective.
A history of the Christian Church from the close of the New Testament period to the present time with chief emphasis upon the development in Western Europe and in the United States.

308. The Epistles of Paul (3). General elective.
A study of the Epistles of Paul in the New Testament; their dates, backgrounds and arguments; the major emphases of Paul's thought; particular studies of portions of Thessalonians, I Corinthians and Romans to demonstrate typical Pauline themes.

309. The Prophets of Israel (3). General elective.
A history of the Hebrew religion as the background of Christianity. Selected figures of the Old Testament are studied; each seen in his own day seeking to interpret his times in light of the eternal messages he was called to deliver.

Secretarial Administration (SA)

Assistant Professors Hale, Lamar, and Waldo
Instructors Evans and Brown

101. Secretarial Science I (5). Lec. and Lab. 10.
The first of a series of four courses in which the student develops the ability to prepare mailable copy. Student begins the study of typewriting and Gregg system of shorthand. One hour per day is devoted to each. Primary emphasis is in the development of correct techniques in both skills. (Not open to students who have not had the equivalent of one unit of H.S. typing. Such students without typing should first take ST 111.)

102. Secretarial Science II (5). Lec. and Lab. 10. Pr., ST 101.
Continuation of ST 101.

111. Business Typewriting (5). Lab. 10. Not open to those with credit in ST 113 or who have one high school unit in typing.
Course for beginners dealing with elements of typewriting to gain facility in the preparation of letters and reports, typing from rough draft, tabulations, the cutting of stencils, and general typing.

113. Personal Typewriting (3). **General elective. Lab. 6. Not open to those with credit in ST 111 or who have one high school unit in typing.**
Introductory course designed for student who wishes to learn typewriting for personal use. Emphasis on touch control of keyboard, centering, appropriate styles for letters, and the preparation of reports. More time spent on the application of fundamentals than on speed.

200. Filing (1).
Methods and procedures of filing.

203. Secretarial Science III (5). Lec. and Lab. 10. Pr., ST 102.
Emphasis on developing production rate on jobs approximating those of a business office. Review of shorthand theory, building shorthand writing speed, and laying a foundation on which to build transcription skill.

204. Secretarial Science IV (5). Lec. and Lab. 10. Pr., ST 203.
Development of transcription ability through the fusion of skills in typewriting, reading shorthand, spelling, grammar, handling supplies, etc. Continuation of shorthand review and dictation speed.

300. Secretarial Procedure (5). Pr., ST 204 and junior standing.
Analysis of the secretarial profession stressing importance of personal factors, the responsibilities of the secretary, and the study of specialized duties. Related work assignments give practice in typical secretarial activities.

301. Dictation (5). Pr., ST 204 and junior standing.
Increased rate of dictation to 120 words per minute and further development of transcription speed.

302. Office Machines (5). Lab. 10. Pr., EC 211 or equivalent, and the ability to type at a reasonable speed.
Course designed to give the student a working knowledge of various machines found in modern offices. Basic training in use of voice-writing, duplicating, adding, calculating, and posting machines.

303. Advanced Office Machines (5). Lab. 10. Pr., ST 302 or equivalent.
Advanced training in use of office machines including addressing machines and a survey of the statistical and accounting applications of modern office equipment.

401. Dictation (5). Pr., ST 301 and junior standing.
More difficult and technical dictation and transcription organized around several types of vocations.

402. Office Apprenticeship (5). Lab. 10. Pr., ST 300 and ST 301 and junior standing.
Practical secretarial training. Student spends two hours each day working in an office to which he is assigned for actual office experience.

Sociology (SY)

Professors Hartwig, Sanders
Assistant Professors Bliss and Shields
Instructor French[*]

Sociology offers preparation for students whose interests lie in the field of human behavior. In the curriculum provided for sociology one finds undergraduate training for such vocational goals as teacher of social sciences; employment in various agencies as public welfare, work with Red Cross, Scouting, and religious organizations; and careers in government or military service. Also available are service courses in industrial sociology and social problems, to provide additional understanding for those majoring in other fields of study.

Students majoring in sociology are required to complete, beyond Introduction to Sociology (SY 201), a minimum of thirty-five hours in the major field of study. This major will include the following courses: Social Problems (SY 202), Cultural Anthropology (SY 203), and Social Thought (SY 309). In addition, each sociology major is required to have Statistics (EC 345), which would be included among his five-hour electives.

When planning his schedule for each quarter in the Junior and Senior years, each sociology major is strongly urged to report to a member of the sociology staff for consultation and advice.

201. Introduction to Sociology (5). Pr., sophomore standing and qualified third quarter freshman with departmental approval. Staff
The principles and processes influencing the social life of man.

202. Social Problems (5). Pr., SY 201. Shields
Current social problems with special reference to the socially inadequate.

[*] Temporary

203. Cultural Anthropology (5). Pr., sophomore standing. French
The nature of culture, using materials taken from scientific studies of societies.

204. Social Behavior (5). Pr., SY 201 or PG 211. Hartwig
The integrated social-anthropological, biological and psychological factors which influence or determine human behavior; the emphasis is upon the normal average individual and/or group situations.

205. Preparation for Marriage (3). General elective. Open to freshmen with consent of instructor. Bliss
Basic factors in dating courtship, mate selection and engagement in preparation for marriage and family living.

207. Introductory Archaeology (5). Pr., SY 201 or SY 203. French
A survey of the history, principles, and methods for investigating and reconstructing past cultures.

301. Sociology of the Family (5). Pr., SY 201 and junior standing. Sanders
The family in contemporary society.

302. Criminology (5). Pr., SY 201 and junior standing. Shields
The causes of crime and its social treatment. Field trips required.

304. Minority Groups (5). Pr., junior standing. Shields
Racial composition of the United States with special emphasis upon the adjustment of minority groups to the culture.

307. The Court and Penal Administration (3). General elective. Shields
An analysis of the experience of the law breaker from arrest through the court and prison to the eventual return to society. Particular attention is paid to correction. To be offered in alternate years.

308. Juvenile Delinquency (5). Pr., SY 201. Shields
A survey of historical and contemporary considerations relative to the juvenile offender. The emphasis is upon research data from the various sciences attempting to deal with this problem.

309. Social Thought (5). Pr., junior standing and SY 201 or consent of instructor. Hartwig
A survey of significant social thought leading to the emergence of modern sociological theory.

310. Social Organization (5). Alternate years. Pr., SY 201 or consent of instructor. Staff
The structure and stratification of society with particular attention given to the contemporary scene.

311. Technology and Social Change (3). General elective. Pr., junior standing. Franklin, Bliss, Hartwig
The relationship between technological development and changes in modern society. Special emphasis is placed upon the human relations aspects of modern science. Designed primarily to meet social science needs of students in the fields of engineering, agriculture, education, and the physical sciences.

312. Marriage Adjustments (3). General elective. Pr., junior standing. Sanders
A survey of emotional, social and biological factors in the family setting with emphasis upon adjustments of marriage and parenthood.

401. Population Problems (5). Pr., senior standing. Hartwig
The problems of quantity and quality of population including problems of composition, distribution and migration. Attention is given to Alabama population.

402. Social Theory (5). Pr., SY 201 or consent of instructor; senior or graduate standing.
A survey of the range of contemporary social theory.

405. Urban Sociology (5). Pr., senior standing. Hartwig
The growth and decline of cities with special emphasis on ecological and demographic characteristics, associations and institutions, class systems, and housing and city planning.

406. Introduction to Social Case Work (5). Pr., senior standing. Bliss
The development of social case work and a survey of modern social case work practice. Primarily for those students intending to enter the profession of social case work or related fields.

407. Public Opinion and Propaganda (5). Pr., junior standing, SY 201 and SY 204 or PG 330 or consent of instructor. Bliss
A survey course in the area of social communication. A study of the formation, place and importance of publics in modern society, of public opinion research, and of propaganda and public relations techniques.

408. Industrial Sociology (5). Pr., junior standing, SY 201, and EC 442 or IM 306 or consent of instructor. Staff

An introductory survey of the sociological approach to business organization and industrial relations. Emphasis is given to organizational principles operative in the economic life within a social system such as a factory or business establishment.

409. Sociology of Religion (5). Pr., SY 201, senior standing, or consent of instructor. Sanders

An analysis of religion as a social institution as found in the world's great religions. To be offered in alternate years.

GRADUATE COURSES

602. Seminar in the Family (5). Pr., SY 301 or HE 304 or consent of instructor. Sanders

An advanced study of the institutional nature of marriage and the family with particular emphasis upon the changing practices and notions in marital relationships as they are related to changes in the structure and functions of the family.

604. Seminar in Race and Culture (5). Pr., SY 201 and SY 304 or consent of instructor. Shields

The adjustment of races to culture with particular reference to the South; the historical and cultural background of the races in America; bi-racial system; problems of race relations.

650. Sociology Seminar (5). Pr., graduate standing or consent of instructor. Hartwig, Sanders

Designed for those students engaged in intensive study and analysis of sociological subject areas.

NOTE: All 400 (except SY 406) and 600 level courses are available for a graduate minor in Sociology.

Speech (SP)

Head Professor Davis
Professor Smith
Associate Professor Ranney°°
Assistant Professors Green and Sanders
Instructors Dorné°, Gillespie°, Gray°°, Kirby, Mattox, Moore°, Rea, Talley°, Torrans, O'Neill°

The Speech program is designed: 1) to furnish adequate fundamental courses for all schools on the campus; 2) to provide elective courses for students interested in the various Speech fields; 3) to offer a Speech major and minor in the schools of Education and Science and Literature; 4) to offer a Speech Therapy major and minor in the School of Education. Students electing a Speech or Speech Therapy major or minor should confer with the Speech staff to plan their programs.

The Speech major, planned as a broad program, provides training for students interested in: 1) pre-professional courses such as law or ministry; 2) basic professional training such as teaching, salesmanship, radio-television, and correction; 3) a general education. Consequently the courses in Speech should be distributed over the six areas of: A) Correction and Voice Science, B) Group Methods, C) Fundamentals, D) Interpretation, E) Public Address, F) Radio and Television.

The Speech major or minor in the School of Science and Literature is governed by the general regulations stated on page 139, and is required to include among his major courses SP 229, 231, 241 and a minimum of one course from subject areas B, D, and F above. The Speech and Speech Therapy majors in the School of Education are governed by the regulations stated on pages 100 and 103.

In addition to the courses below the Speech Department maintains a Speech and Hearing Clinic which offers individual assistance to persons desiring aid in overcoming speech or hearing defects. Applicants for this service should see Dr. Ranney.

229. Voice and Diction (5). All quarters. Staff

A course affording opportunity for individual work in voice development and problems of pronunciation and articulation. Lectures in theory.

231. Essentials of Public Speaking (5). All quarters. Staff

Theory and practice of effective public speaking involving content, organization, language, voice and bodily action. Instruction in method of preparing and delivering of extemporaneous speeches and in the various means of making ideas effective. A special section is offered for foreign students. (Credit in this course excludes credit in SP 305.)

° Temporary.
°° On leave.

235. Interpretative Reading (5). Fall, Spring. Gray
A course offered toward teaching the student how to read aloud, to communicate ideas clearly, forcibly and interestingly from the printed page.

241. Survey of the Bases of Speech (5). Fall and Spring. Davis
Designed to acquaint the prospective speech major or minor with the fundamentals of speech, the psychological, sociological, and other bases.

253. Group Leadership (3). All quarters. General elective. Smith
Considers the nature and functions of group leadership; the role of democratic leadership in organizing and conducting a group meeting to reach the aims of that group. Students gain leadership experience in class activities designed to help them learn and perfect democratic leadership techniques.

273. Group Discussion (5). All quarters. Smith
Theory and practice in group problem solving through discussion. The values and limitations of discussion, the prerequisites of reaching agreement and a systematic approach to solving problems in group discussion. Special consideration is given to leadership in problem solving.

280-1-2. Debate Workshop (1-1-1). All quarters. Rea
Introduction to the study of the national debate question for beginning debaters interested in competition debate. Lecture and practical work.

283. Argumentation and Debate (5). Fall and Winter. Rea
A study of debating techniques and procedures; their application to issues of current public interest; the gathering, organization, and presentation of facts, proofs, evidences.

285-6. Radio Workshop (3-3). All quarters. Kirby
Advanced and practical laboratory experience in presenting news, dramatic and variety type programs over local stations.

287-8. Television Workshop (3-3). All quarters. Sanders
Practical laboratory work in the field of television with experience in the local educational television studios working in all phases of the medium.

301. Phonetics (5). Staff
A study of the principles of phonetics and their application to speech.

305. Public Speaking (3). All quarters. General elective. Staff
Designed to aid the student in preparing and delivering effective public speeches extemporaneously. Emphasis is on narrative, expository, argumentative and motivational speeches. (Credit in this course excludes credit in SP 231.)

316. Parliamentary Procedure (3). All quarters. General elective. Staff
Designed to aid the individual who may lead or participate in discussions or organizations where orderly procedure is needed. Theory and practice both employed.

321. The Speech and Hearing Mechanism (5). Ranney
The study of the anatomy and physiology of the speech and hearing mechanism.

331. Advanced Public Speaking (5). Winter, Spring. Pr., SP 231 or 305, or by consent of instructor. Davis
Structure, style, and delivery of various types of speeches for different occasions. Speeches to inform, to persuade, and to entertain are stressed. Theory and study of current examples combined with practice.

334. Great American Speeches (3). All quarters. General elective. Davis
A critical study and comparision of representative outstanding American speeches; the issues with which they were identified; their relation to the social scene.

337. Fundamentals of Radio and Television Broadcasting (5). Fall, Winter, Pr., SP 231 or 305 or consent of instructor. Sanders
An introductory course to acquaint the student with the non-technical field, including announcing, programming, continuity and coordination of activities.

338. Modes of Film Communication (5). Spring. Sanders
A survey of the film industry's contribution to television and other forms of mass communication; an analysis of the styles and forms of film production as entertainment, communication, education and art.

340. Speech Reading (5).
Description and discussion of the major speech reading (lip reading) principles and theories; analysis of the patterns of instruction of children and adults; clinical practice.

341. Hearing Tests and Instruments (5).
Theory and practice of individual and group hearing tests; audio-metric instruments; clinical practice.

380-1-2. Debate Workshop (1-1-1). All quarters. Rea
Advanced study of the national debate question for experienced debaters. Analysis of logical, ethical and emotional proofs in competition debate. Lecture and practical work.

411. Introduction to Problems in Hearing (5). Winter. Pr., junior standing.
A study of the principles of auditory reception, the hearing mechanism, and the problems involved in measuring, evaluating, and conserving hearing.

420. Advanced Interpretation (5). Pr., SP 235 and junior standing.
A course directed to develop skill in interpreting and communicating the meaning of literature.

431. Principles of Speech Correction (5). All quarters. Pr., junior standing. Ranney
A course designed to enable students to learn how to identify speech defective cases and to learn various types of survey techniques. Clinical observation.

432. Advanced Speech Correction (5). Pr., junior standing, SP 431 or equivalent. Ranney
A continuation of SP 431. Clinical practice.

437. Advanced Radio Broadcasting (5). Spring. Pr., junior standing and SP 337 or consent of instructor. Sanders
A continuation of SP 337. An advanced course in announcing techniques, program organization, audience analysis, recording, sound effects, directing.

438. Radio, Television and Film Writing (5). Fall. Sanders
A study of the forms, techniques and types of writing as they apply to radio, television and films. Special emphasis will be placed on practical writing performance. Units will cover the writer's use of picture, sound and special production devices as they apply to the three media.

439. Television in Education (5). Winter. Sanders
A study of the uses, problems, potentialities and current developments in educational television; observation of and participation in the University educational television activities and productions.

441. Hearing Pathology (5). Pr., SP 411 or equivalent.
Evaluation and rehabilitation of aural handicapped children and adults; hearing aids and auditory training; clinical practice.

442. Persuasive Speaking (5). Fall. Pr., junior standing and SP 231 or 305 or consent of instructor. Green
Influencing individuals and audiences by means of spoken appeals. Salesmanship speaking. Analysis of the forces which lead to belief and action. Practice in organizing and presenting such appeals.

473. Advanced Discussion (5). Spring, Summer. Pr., junior standing and SP 273 or consent of instructor. Smith
The study of, and practice in, the theory and organization of discussion and conference groups including the individual speakers. A course designed primarily for those who will work with groups, e.g., teachers, county agents, Home Demonstration Agents, Athletic Directors, Industrial Coordinators.

483. Advanced Argumentation and Debate (5). Pr., junior standing and SP 283 or consent of instructor. Rea
A study of the function of argumentation and debate in a democracy and its application of principles of logic and evidence in past and present public speaking and debating.

GRADUATE COURSES

601. Introduction to Graduate Study in Speech (5).
Nature and methods in graduate study in Speech; exploration of areas in which research is needed; resources available; methods of research in Speech; structuring the research problem; presenting the results of research in Speech.

607. Independent Study (1-5). (Course may be repeated not to exceed 10 hours credit).
A. Public address; B. Interpretation; C. Radio and Television; D. Group Methods; E. Speech Pathology; F. Audiology. Conferences, readings, research, and reports in one of the listed areas.

610. Rhetorical Theory and Criticism (5).
A. Ancient; B. Medieval to 19th Century; C. 19th and 20th Centuries. Studies of the historical development of theories, men and movements pertaining to rhetoric and rhetorical criticism in the periods indicated.

620. The History and Theory of Interpretation (5).
A study of the growth and change of psychological and philosophical theories and methods of creative, artistic, and oral reading.

630. Studies in Radio, Television and Film (5).
A study of the combined media and their relationship with speech and communication.

632. Clinical Methodology (5). Pr., SP 431, 432 or equivalent.
The principal methodologies and techniques currently employed in the management of the disorders of speech. Clinical practice.

650-1. Speech Pathology I and II (5-5). Pr., SP 431 and 432 or equivalent.
Advanced studies dealing with disorders of Speech. Materials may be selected from cerebral disturbances (ophasis and cerebral palsy), palotolargyngeal disturbances (esophageal and cleft palate), voice disorders, stuttering, articulation disorders (including dialect), delayed development of speech, and other appropriate areas.

655. Clinical Problems in Speech (1-3). Pr., SP 431, 432 or equivalent. The course may be repeated.
Methods, techniques, and clinical management of the disorders of speech. Clinical practice required.

660-1-2. Audiology I-II-III (5-5-5). Pr., SP 441, 411 or equivalent.
Advanced studies dealing with the disorders of hearing. Materials drawn from: A. speech reading; B. auditory training; C. hearing testing and measurement; D. child and adult rehabilitation; E. hearing aids and hearing aid evaluation; F. education of the deaf and others.

665. Clinical Problems in Hearing (1-3). Pr., SP 441, 411 or equivalent. The course may be repeated.
Methods, techniques, and clinical management of the disorders of hearing. Clinical practice required.

673. Seminar in Discussion (5). Pr., SP 273 or equivalent.
The study of group problem solving through discussion. Includes the survey of published experimental work in discussion and considers the values and limitations of discussion as tools of the democratic leader. Special attention is paid the application of discussion to problems in education, business, industry and agriculture.

678. Seminar in Debate (1-5). May be repeated not to exceed 5 hours credit.
A study of the psychological concepts of argument. The techniques and methods employed in argumentative discourse. Critical analysis of selected controversies and a survey of published experimental work in debate.

699. Thesis (Credit to be arranged).

Textile Technology (TT)

Professors Adams and Knight
Associate Professors Herron and Waters
Assistant Professor Phillips

101. Introduction To Textiles (1).
An orientation course for freshmen which briefly introduces all branches of the textile industry.

210. Fiber Processing (5). Lec. 4, Lab. 3.
Study of construction and operation of equipment for opening, cleaning, blending, picking, carding, combing, drawing; adaptation of these processes to synthetics and wool; calculations necessary for the planning and operation of this equipment.

211. Yarn Manufacture I (5). Lec. 4, Lab. 3.
Study of construction and operation of roving and spinning equipment for cotton, wool, and synthetics; long draft systems and special drafting, systems for blends, etc.

220. Weaving and Designing I (5). Lec. 4, Lab. 3.
Study of automatic cam loom mechanism with designing of fabrics made on these looms.

301. Applied Textiles (3). Pr., sophomore standing.
A study of textiles from raw material to finished fabric, including natural and man made fibers.

304. Textile Fibers (2). Lec. 1, Lab. 3.
Study of textile raw materials, including cotton, rayon, nylon, wool, flax, etc.

307. Bleaching and Dyeing (5). Lec. 4, Lab. 3.
Bleaching, dyeing, and finishing of natural and synthetic textiles; all types of dyes for textiles, their application and fastness are studied; survey of all finishes used on textile fabrics.

317. Dyeing and Finishing (5).
Plant application methods and plant problems in dyeing and finishing of natural and synthetic textiles.

318. Physical Testing (2). Lec. 1, Lab. 3. Pr., junior standing.
Testing procedures, laboratory use of textile testing equipment, and interpretation of data obtained in physical testing.

319. Chemical Testing (2). Lec. 1, Lab. 3. Pr., junior standing.
Procedures and laboratory work on all types of textile tests which are of a chemical nature; analysis of textile chemicals.

320. Weaving and Designing II (5). Lec. 4, Lab. 3. Pr., TT 220.
Dobby and special weaving attachments and designs applicable to the type of loom. Leno, terry, and extra warp fabrics.

321. Weaving and Designing III (5). Lec. 4, Lab. 3. Pr., TT 320.
Mechanisms and patterns requiring multiple systems of filling; box motions; practical weaving problems; filling backed, double, and triple fabrics; weaving mill machinery layout and labor organization.

322. Yarn Manufacture II (5). Lec. 4, Lab. 3. Pr., TT 210 and TT 211.
Methods of obtaining higher quality yarns; yarn production planning; practical manufacturing problems; yarn mill machinery layout and labor organization.

323. History of Textiles (5). Pr., sophomore standing.
A study of the textile industry dating back some 6,000 years; types of weaves, colors, designs, and methods of making fabrics during different periods; fibers used, production and consumption of major textile products; the development and importance of the textile industry.

405. Warp Preparation (5). Lec. 4, Lab 3. Pr., junior standing.
Preparation of warp yarn for weaving.

406. Textile Costing (5). Pr., junior standing.
Basic priniciples for figuring textile production costs; allocation of costs; fabric cost sheet; marketing costs.

412. Textile Management (3). Pr., junior standing.
Analysis of management problems in textile industry including policy determination, job analysis, work loads, training, organization, plant layout, etc.

414. Textile Fibers II (5). Pr., senior standing.
Origin, characteristics, and properties of the various textile fibers, both natural and synthetic.

417. Textile Microscopy (5). Lec. 3, Lab. 6. Pr., PS 202 and senior standing.
Optical and microscopical analysis of textile fibers, yarns, and fabrics; special applications of photomicrography and polariscopic analysis.

418. Jacquard Weaving and Design (2). Lec. 1, Lab. 3. Pr., TT 220 and junior standing.
Jacquard mechanism and design of original patterns for jacquard loom.

422. Synthetic Fibers I (5). Lec. 4, Lab. 3. Pr., junior standing.
Manufacturing and processing.

426. Synthetic Fibers II (5). Pr., CH 208.
Technological aspects of the processes involved in the manufacture of such synthetic fibers as viscose rayon, acetate rayon, nylon, vinyon, aralac, glass.

430. Fabrics (3). Pr., junior standing.
Identification, construction, and use of basic and special fabrics; classification and sources of fabric defects.

431. Fabric Analysis (3). Lec. 2, Lab. 3. Pr., TT 320.
Analysis of fabric structure and determination of specifications.

432. Finishing and Printing (5). Lec. 4, Lab. 3. Pr., TT 317 and CH 316.
A chemical study of textile finishes and their application, printing equipment and methods, printing paste preparation, etc.

Veterinary Medicine (VM)

Departments

The School of Veterinary Medicine is organized under six departments. They are listed below with the instructors and a general statement of facilities and methods of instruction given for each department.

Anatomy and Histology

Head Professor Fitzgerald
Associate Professor Whiteford
Assistant Professor James
Instructor Holloway
Technician Dennis

Instruction in the department consists of lectures, recitations and laboratory work. Numerous charts, photographs, lantern slides, and permanent anatomical specimens are employed for demonstration.

In anatomy laboratory embalmed specimens of the horse, ox, sheep, pig, dog, and fowl are dissected, with special attention being directed to practical areas of anatomy. Since the feel of tissue is requisite to good surgery, the student does all dissection and helps with embalming under observation of the instructor.

The extensive departmental collection of permanent microscopic slides and demonstration materials serve as a basis for instruction in histology and embryology. An understanding of normal tissue and development is essential for diagnosis and the apprehension of clinical medicine.

Bacteriology

Head Professor Neal
Associate Professor Attleberger[*]
Assistant Professor Crawford[*]
Instructors Alford, Miller, Wilt, and Feldman
Technician Summers

The Department of Bacteriology offers opportunity for study of microorganisms, other than protozoa and animal parasites. Emphasis is placed on bacteria, molds, rickettsiae and viruses as causes of diseases, microbial processes in nature and industry, and the characteristics of the various microorganisms involved.

Courses are offered that are designed for students in various fields of study; e.g., agriculture, home economics, laboratory technology, pharmacy, sanitary engineering and veterinary medicine.

Lectures are supplemented with technical laboratory work and demonstrations. Courses for veterinary students are required in general and pathogenic bacteriology, mycology, virology and immunology. Modern facilities are available, permitting microbiological laboratory diagnosis in conjunction with the clinics.

Pathology and Parasitology

Head Professor Seibold
Research Professor Bailey
Associate Professors Groth and Hoff
Assistant Professor Diamond
Instructors Teer and Eubank
Research Associate Cabrera
Technicians Jones, McConnell, Shivers, and Eaves

The courses in this department are designed to give the pre-clinical student a basic understanding of the fundamental anatomic and physiologic alterations of disease. Particular attention is given to the manifestations of animal diseases in the organs and systems of the body and to the laboratory procedures which are employed as an aid in their diagnosis. During the junior and senior years small groups of clinical students are given close supervision as they assist in performing autopsies and making examinations in the clinical pathology laboratory.

Fresh specimens from the clinics and autopsy room supplement the permanent materials (histologic sections, gross museum specimens, and color transparencies) to provide ample material for use in the laboratory work.

The department also cooperates with the Veterinary Diagnostic Laboratory, State Department of Agriculture and Industries, in the diagnostic service it renders the veterinarians and animal owners of the state.

Physiology and Pharmacology

Head Professor Clark
Professors Dacres and Burns
Assistant Professors Alexander and Woodley
Instructor Robertson
Technician Cato

Physiology, being the study of the normal functions of the various organs of the body, is taught by means of lectures and laboratory work. In the laboratory the student is shown how the organs and their secretions function so that he will recognize deviations from the normal during his later studies of disease. Live animals as well as academic demonstrations are provided for this purpose.

[*] On study leave.

Large Animal Surgery and Medicine

Head Professor Schell
Professors Gibbons and Wiggins
Associate Professors Walker and Geary
Assistant Professors Vaughan and Winkler
Instructor Williams

The lecture courses outlined include a detailed study of the diseases of farm domestic animals. The laboratory work consists of large animal clinics which are provided with modern facilities for housing and treating animals requiring hospital care. The student's time is devoted to the actual application of diagnostic procedures and prophylactic, therapeutic and surgical treatment of animal diseases, both in the hospital and on farms.

Ambulatory clinic, operated in connection with the Large Animal Clinic, is required of all senior students.

Small Animal Surgery and Medicine

Head Professor Hoerlein
Professor Heath
Associate Professor Geary
Assistant Professor Horne
Instructors Hoffer and Albert
Research Assistant Few

The theory and practice of small animal surgery and medicine and radiology as taught to the third and fourth year students summarizes and demonstrates the application in practice of previously received basic training in anatomy, physiology, bacteriology, pathology, parasitology, and therapeutics. This material is presented by lectures, demonstrations, laboratory exercises, and clinical instruction.

200. General Microbiology (5). Lec. 3, Lab. 4. Fall, Winter, Spring. Pr., General and Organic Chemistry. Wilt
A study of the fundamentals of microbiology including history of microbiology, morphology, metabolism, classification, identification, cultivation, and distribution of bacteria, viruses, yeasts, and molds; also an introduction to applied microbiology.

204. Pathogenic Microbiology (5). Lec. 3, Lab. 4. Fall, Winter, Summer. Pr., General Microbiology. Alford
A study of microorganisms pathogenic to man and animals. Immunity to, and laboratory diagnosis of, diseases caused by microorganisms.

210. Human Physiology (5). Lec. 3, Lab. 4. All quarters. Staff
Lectures include a study of the functions and manner of operation of the body and its parts, with special emphasis on digestion, circulation and reproduction. Laboratory exercises are used to illustrate the functions of the various organ systems of the body.

220-221. Human Anatomy and Physiology (5-5). Lec. 3, Lab. 4. Winter and Spring. Pr., ZY 102. Staff
For students in Laboratory Technology and others who are qualified. A study of the structure and functions of the various organs and tissues. Human models, cats and frogs are used in the laboratory to supplement the lecture material.

311. General Bacteriology (5). Lec. 3, Lab. 4. Winter and Summer. Wilt
Designed for students in Home Economics. The course deals with elementary bacteriology as applied to foods, industry and home sanitation.

320. Anatomy (5). Lec. 2, Lab. 10. Fall. James and Holloway
A comparative study of the osteology, arthrology, and myology of the domestic animals. This is accomplished by the comparative study of the skeleton of the different species associated with demonstration of living animals. Individual bones of all species are studied and compared. Typical articulations shown from museum preparations are compared with those of the living animal. Myology in its relation to conformation of the different types and breeds is also stressed by dissection of fresh and embalmed material.

321. Anatomy (5). Lec. 2, Lab. 10. Winter. Pr., VM 320. James and Holloway
A continuation of VM 320. Dissection of ruminants, equines and carnivorae. In addition to myology, splanchology, angiology and neurology are emphasized.

322. Anatomy (5). Lec. 2, Lab. 10. Spring. Pr., VM 321. James and Holloway
A continuation of VM 321. Dissection of equines, ruminants, and carnivorae. Splanchology, angiology and neurology are repeated and aesthesiology is emphasized. In making the necessary dissections ample opportunity is offered for a review of arthology and myology. The latter half of this course is devoted to the anatomy of domestic fowl and swine.

324. Veterinary Genetics (3). Lec. 3. Spring. Clark
A course designed to illustrate the basic principles of genetics with special reference to those anatomical and metabolic defects associated with inherited diseases of domestic animals.

326. Histology (5). Lec. 2, Lab. 6. Fall. Fitzgerald and Whiteford
A comprehensive microscopic study of the form, structure, and recognition of the basic tissues of domestic animals.

327. Organology (5). Lec. 2, Lab. 6. Winter. Pr., VM 326. Fitzgerald and Whiteford
A continuation of VM 326. A comprehensive microscopic study of the tissue composition of organs and organ systems.

328. Embryology (5). Lec. 2, Lab. 6. Spring. Pr., VM 327. Fitzgerald and Whiteford
The study of the formation and early development of the embryos of domestic animals. Fetal membranes and placentation is emphasized.

329. Veterinary Physiology (3). Lec. 3. Winter. Woodley
A comprehensive study of the functions of the muscular, nervous and respiratory systems.

330. General Microbiology (5). Lec. 3, Lab. 4. Fall. Neal
A study of the fundamentals of microbiology for students in veterinary medicine. This involves the biology and technical procedures used in the identification of microorganisms other than the protozoa.

331. Infection and Immunity (5). Lec. 3, Lab. 4. Winter. Pr., VM 330 or equivalent. Neal
A study of sources and mechanisms of infection, principles of immunology and biological therapy. It includes a study of the body defenses against infection and serological techniques such as agglutination, precipitation, and hypersensitization tests.

333-334. Zootechnics (3-2). Lec. 2, Lab. 4; Lec. 2. Fall and Spring. Schell, Hoffer
The course is designed to acquaint veterinary students with the feeding, management, handling, training, and showing of farm and pet animals.

336. Veterinary Physiology (5). Lec. 4, Lab. 3. Spring. Burns
A comprehensive study of the endocrine and reproductive systems of domestic animals.

421. Animal Physiology (5). Lec. 5. Winter. Staff
This is a study of the physiology of the farm animals with special emphasis on digestion, endocrinology and reproduction.

422. Animal Disease Control (5). Lec. 5. Spring. Pr., VM 420, 421. Miller
A study of herd management and practices proven to be of value in the prevention and control of the important diseases of animals.

436-437-438. Pharmacology (5-3-5). Lec. 3, Lab. 4. Fall, Winter and Spring. Woodley and Robertson
Pharmacology, in its broad sense, embraces materia medica, pharmacology, and pharmacodynamics. Detailed consideration is given to the physiological action of drugs used in veterinary practice, methods of administration, incompatabilities, and also prescription writing and pharmaceutical arithmetic.

443. Veterinary Physiology (5). Lec. 3, Lab. 6. Fall. Burns
A detailed study of digestion and metabolism as well as a study of various laboratory tests used in veterinary medicine.

444. Veterinary Medicine (5). Lec. 3, Lab. 6. Winter. Clark
A detailed study of renal physiology, electrocardiography, blood and circulation.

450. General Pathology (5). Lec. 3, Lab. 4. Fall. Pr., VM 326-327-328. Groth
This course is a study of the fundamental anatomic and physiologic alterations of disease. The topics discussed in lecture and demonstrated in the laboratory include disturbances in the metabolism of proteins, carbohydrates, fats and minerals; circulatory disturbances; inflammation and repair of damaged tissue; disturbances in the growth and differentiation of cells; and the pathology of tumors. Particular attention is given to the relation of these changes to the understanding and diagnosis of diseases of animals.

451. Systemic and Special Pathology (5). Lec. 3, Lab. 4. Winter. Pr., VM 450. Groth
Systemic and special pathology is a study of the manifestations of disease in the organs and systems of the animal. It includes discussion and laboratory demonstration of the changes caused by important infections, nutritional, toxic and metabolic diseases of animals. Particular attention is given to the gross and microscopic criteria on which definite diagnosis is based.

452. Clinical Pathology (3). Lec. 1, Lab. 6. Spring. Pr., VM 451. Teer
Instruction is given in the methods of collecting, preserving and submitting specimens for examination. Clinical laboratory methods of examining urine, blood, and other body fluids are performed by the students in the laboratory periods. The lectures are devoted primarily to the application and interpretation of the results as an aid to formulating a diagnosis or prognosis.

453. Systemic and Special Pathology (2). Lec. 1, Lab. 2. Spring. Pr., VM 451. Groth
A continuation of VM 451.

456. Veterinary Parasitology (3). Lec. 2, Lab. 2. Fall. Diamond
This course begins with an introduction in the science of parasitology which serves as a basis for a detailed study of the important endo parasites of the domestic animals. During this quarter the individual parasites of the ruminants are studied. Emphasis is placed on the morphology and bionomics of the parasites to provide a basis for diagnosis and control.

457. Veterinary Parasitology (5). Lec. 3, Lab. 4. Winter. Pr., VM 456. Diamond
This course is a continuation of VM 456. The internal parasites of swine, equine, dogs, cats, and poultry are covered.

458. Veterinary Parasitology (3). Lec. 2, Lab. 2. Spring. Pr., VM 457. Diamond
A study of the important ectoparasites of the domestic animals, with emphasis placed on the items listed in VM 456 for the endoparasites.

461. Pathogenic Microbiology (5). Lec. 3, Lab. 4. Spring. Pr., VM 331 or equivalent. Neal
A systematic study of bacteria, viruses, yeasts and molds of importance in diseases of domestic animals. It includes technical methods for isolation, and biological measures for control of the diseases they cause.

500-501-502. Veterinary Medicine (5-5-5). Lec. 5. Fall, Winter and Spring. Wiggins and Gibbons
A detailed study of the etiology, symptoms, pathogenesis, diagnosis, treatment and prevention of the medical diseases affecting the various systems and organs of the equine, bovine, ovine and porcine species. Studies begin with diseases of the respiratory system and continue with diseases of the digestive system, urinary system, circulatory apparatus, nervous system, skin and disorders of metabolism.

503. General Surgery (3). Lec. 3. Winter. Vaughan
Principles of general surgery including general surgical techniques, administration of anesthetics, restraint, surgical bacteriology, preoperative preparation, post-operative care, surgical repair and the care and selection of instruments.

504. Large Animal Surgery (5). Lec. 5. Spring. Vaughan
A study of special surgical conditions affecting the various parts of the animal body, and surgical treatment of such. The physical examination of the eye and a study of diseases of the eye, pathological horse shoeing, diagnosis and treatment of lameness, and special surgical operations are completed in this course.

508. Large Animal Clinic (1). Lec. 4. Spring. Schell and Staff
Under the direction of the instructor the student begins the actual handling and treatment of clinical cases. The basic principles of diagnosis and treatment of diseases learned in the previous clinical courses are applied by the student. Students are assigned to clinical laboratory and post mortem work. Clinic sessions will be held every afternoon Monday through Friday and on Saturday morning. Students are required to be present at all clinic sessions.

510. Small Animal Medicine (5). Lec. 5. Fall. Hoerlein
Detailed consideration of the systemic, noninfectious, and parasitic diseases of the small domestic animals.

512. Small Animal Surgery (5). Lec. 3, Lab. 6. Spring Hoerlein and Horne
Lecture—specific basic surgical techniques. Laboratory—performance of basic surgical operations on anesthetized animals which are owned by the college.

518. Small Animal Clinic (1). Lab. 4. Spring. Heath
During the spring quarter students begin actual handling, treatment, and assisting in cases requiring surgical procedures. Students are also assigned to clinical laboratory, necropsy, and radiology.

519. Small Animal Medicine (3). Lec. 3. Spring. Pr., VM 510. Heath
A continuation of Small Animal Medicine VM 510 giving detailed consideration to advanced study and differential diagnoses of diseases of small domestic animals.

521. Milk Sanitation (5). Lec. 4, Lab. 2. Winter. Pr., VM 461. Dacres
A study of sources and development of bacteria in milk; sanitary production; public health requirements; standard methods of milk analysis; the bacteriological control of milk supplies; milk plant sanitation and equipment; the methods of dairy farm and plant inspection; and occasional inspection trips.

526-27. Physical Diagnosis and Clinical Technics (2-2). Lec. 1, Lab. 4. Fall and Winter. Vaughn, Hoffer and Albert
The demonstration and practice of methods employed in physical diagnosis, handling, restraint and administration of therapeutic agents to farm and small animals.

528. Applied Anatomy (2). Lec. 1, Lab. 2. Fall. James and Holloway
Deals with those aspects of anatomy which are related to diagnostic obstetrical and surgical procedures.

530. Radiation Biology and Diagnostic Radiology (5). Lec. 3, Lab. 4. Winter. Geary and Woodley

The first half of this course deals with the effects of radiation on animal tissues, the use of radioactivity as a food preservative, and the therapeutics of radiation injury. The theory and use of instruments designed to detect radioactivity are also covered. The second half of the course deals with a study of the fundamentals of radiology and the clinical application of diagnostic roentgenology for veterinary medicine.

531-551-552. Jurisprudence and Ethics (1-1-1). Lec. 1. Winter, Summer. Schell

Laws relating to duties of the veterinarian to the public and to his clients, his liabilities, rights, collection of fees, etc., will be considered. Ethics as applied to the veterinary profession will be stressed.

553. Special Anatomy (1 to 5). Hours and credit to be arranged. Pr., VM 320. Whiteford, James and Holloway

An elective course which deals with any phase of anatomy of domestic animals related to the anticipated field of specialization by the student.

554. Veterinary Medicine (3). Lec. 3. Summer. Wiggins

The study and identification of the poisonous plants of the Southeastern states as well as their characteristic symptoms, lesions and treatment.

555-556. Infectious Diseases (5-5). Lec. 5. Fall and Winter. Gibbons

These courses are designed to include a study of the principal infectious diseases of the large domestic animals. It is concerned mainly with the epizootiology, etiology, symptoms, diagnosis and prevention of diseases, including immunization and sanitation. The first quarter includes the study of acute and chronic bacterial diseases. The second quarter is devoted to consideration of virus and protozoan diseases. Federal and State regulations governing the interstate movement of animals and Federal and State quarantine laws and regulations are also covered.

557. Applied Anatomy (1). Lab. 2. Summer. James and Holloway

Deals with those aspects of anatomy which are related to diagnostic, obstetrical and surgical procedures.

558. Applied Anatomy (1). Lec. 1. Winter. James and Holloway

Deals with those aspects of anatomy which are related to diagnostic, obstetrical and surgical procedures.

560. Obstetrics (5). Lec. 5. Summer. Walker

A study of the normal and abnormal conditions connected with reproduction in domestic animals. Methods of diagnosis and treatment of sterility in both male and female, and methods of artificial insemination will be included in this course.

561. Veterinary Medicine (5). Lec. 5. Fall. Horne

The study and methods of diagnosis, postmortem findings, and treatment of common chemical and venom poisoning of farm animals and pets.

562-563-564. Large Animal Surgical and Obstetrical Exercises (1-1-1). Lab. 2. Summer, Fall, and Winter. Walker and Vaughan

Demonstrations and practical application of surgical and obstetrical procedures as carried out on farm animals.

566-567-568. Large Animal Clinic (2-2-2). Lab. 8. Summer, Fall, and Winter. Schell and Staff

Consists of daily conferences and clinical laboratory. The laboratory consists of practice in diagnosis, therapy, post-mortem, and clinical laboratory examinations. The instruction is accomplished in small groups each under the supervision of an instructor of the clinical or pathology staff.

572-573-574. Small Animal Surgical Exercises (1-1-1). Lab. 2. Summer, Fall, and Winter. Hoffer and Horne

Detailed consideration and performance of advanced small animal surgery.

575. Meat Sanitation (5). Lec. 5. Summer. Pr., VM 452, 458, and 461. Miller and Feldman

A study of ante-mortem and post-mortem inspection of animals slaughtered for food; interpretation of regulations governing the disposition of carcasses showing pathological conditions; construction of abattoirs for small towns.

576-577-578. Small Animal Clinic (2-2-2). Lab. 8. Summer, Fall, and Winter. Hoerlein, Heath and Horne

Consists of daily conferences and clinical laboratory. The laboratory consists of practice in diagnosis, therapy, post-mortem, and clinical laboratory examinations. The instruction is accomplished in small groups each under the supervision of an instructor of the clinical or pathology staff.

582. Seminar (3). Winter. Wiggins and Staff All Departments

Each student prepares one or more case reports or literature reviews as assigned by the faculty Seminar committee. Written reports are prepared and a summary given before the entire class and faculty members. This is followed by an open discussion by students and faculty.

588. Veterinary Medicine (5). Lec. 5. Winter. Gibbons and Burns
This course is designed to place special emphasis on the newer aspects of diseases of metabolism and the nutritional diseases of farm animals. A portion of the course is devoted to the special study of swine and sheep diseases.

592. Internship. Spring. Staff
Completion of satisfactory internship during the spring quarter with reputable veterinary practioner required for graduation.

GRADUATE COURSES

Courses for Advanced Undergraduates and Graduates

Candidates for master's degrees in the School of Veterinary Medicine may be required to pass a preliminary oral or written examination to demonstrate adequate knowledge in their chosen fields. They must meet the general requirements for admission into the Graduate School. For further details as to the conditions and requirements pertaining to graduate work, the applicant is referred to the chapter on the Graduate School in this catalogue and memoranda issued by the school; also see special Graduate School bulletin.

The following graduate courses are offered only for students who have completed the requirements for the degree Doctor of Veterinary Medicine, except where indicated.

414. Techniques in Bacteriology (5). Pr., VM 461 or equivalent and junior standing. Any quarter by arrangement. Neal
Advanced techniques used in bacteriology, pertaining to isolation, cultivation and identification of microorganisms. (Course limited to five students.)

418. General Pathology (5). Lec. 3, Lab. 4. Fall. Pr., satisfactory courses in histology and physiology. Groth
A study of the fundamental alterations of disease, adapted for especially qualified graduate students. (Not available for candidates for M.S. in Veterinary Medicine.)

425. Intermediate Human Physiology (5). Lec. 4, Lab. 2. Summer or Fall by arrangement. Pr., VM 210 or its equivalent and junior standing. Robertson
This course is designed for advanced students in home economics, education and others who are qualified. It consists of a detailed study of the physiology of the various organs of the body. (Not available for candidates for M.S. in Veterinary Medicine.)

441. Physiological Function Tests and Laboratory Diagnosis (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor, acceptable courses in physiology, and junior standing. Burns
Chemical, photometric, and enzymatic procedures used in diagnosis of abnormal body functions. Included are function tests for the thyroid, liver, kidney, heart, pancreas, etc.

460. Histological Techniques (2 to 5). Hours and credit to be arranged. Pr., VM 326 or equivalent and junior standing. Fitzgerald and Whiteford
A detailed study of the techniques employed in the preparation of cytological and histological materials.

462. Microbial Physiology (5). Lec. 2, Lab. 6. Pr., VM 420 or other satisfactory courses in microbiology and senior standing. By arrangement. Wilt
A survey of metabolic changes occuring within microorganisms, metabolites which are produced and actions on inorganic substances, nitrogenous compounds, citric acid, carbohydrates, etc. Also a study of microbial growth, biosynthesis and adaptation. The laboratory will stress qualitative and to a limited extent evidence of quantitative metabolic phenomena. (Available to especially qualified students in other schools as well as to candidates for M.S. in Veterinary Medicine.)

465. Special Techniques in Histopathology (3). Lab. 9. Pr., VM 453, VM 460. Any quarter by arrangement. Groth
A study of special stains and techniques of histochemistry employed in the preparation of materials for histopathologic study.

467. Gross Pathology (2). Lab. 6. Pr., VM 453, junior standing and permission of instructor. Any quarter by arrangement. Staff
Consists of regular participation in the autopsy examinations under the supervision of senior staff members and is designed to give the graduate student experience in autopsy procedures and in diagnostic interpretation of gross lesions. (Required of all majors and minors in Pathology.)

470. Health Physics (5). Lec. 4, Lab. 3. Fall. Pr., permission of instructor. (Designed for students in biological and physical sciences who might use radioactive nuclides in their respective professions.) Clark and Carr
Fundamental principles of radioactivity, instrumentation for detecting and monitoring radioactive nuclides; radiation effects on man; permissible radiation dosages; safe handling of radioactive substances; and shielding from various radiations.

480. Radiological Techniques (5). Lec. 3, Lab. 4. Any quarter by arrangement. Geary
A detailed study of radiographic techniques including assignments on basic radiation physics.

601-602. Advanced Pathogenic Microbiology (5-5). Lec. 2, Lab. 6. Any quarter by arrangement. Pr., acceptable courses in microbiology and immunology. Neal
A comprehensive study of the identification of pathogenic microorganisms and their relationship to animal diseases.

604-605. Immunology (5-5). Lec. 2, Lab. 6. Pr., VM 461 or equivalent. Spring quarter by arrangement. Neal
A detailed study of immunizing agents, methods of establishing immunity, and techniques for demonstrating various types of immunity and antigen-antibody reactions. The work may be arranged to meet the particular interest of the student.

606. Virus and Rickettsiae (5). Lec. 2, Lab. 6. Any quarter by arrangement. Pr., acceptable courses in bacteriology and immunology. Neal
Nature, activities and methods of cultivation of viruses and rickettsiae; their relation to bacteria, plants and animals.

609. Clinical Mycology (5). Lec. 2, Lab. 6. Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in bacteriology. Neal
Methods and techniques used in isolating and propagating yeasts, molds and actinomycetes pathogenic for animals. Laboratory diagnosis of fungus infections in animals.

611. Advanced Pathology (5). Lec. 2, Lab. 6. Pr., VM 453 or equivalent. Spring or Summer. Seibold
A comprehensive study of systemic and special pathology.

613. Diagnostic Histopathology (1-5). Hours and credit to be arranged. Pr., VM 465. Any quarter by arrangement. Seibold
A comprehensive study of the histopathology of diseases of domestic, wild and zoo animals. The student studies all appropriate material submitted for histopathologic diagnosis under the supervision of the pathologists.

615. Oncology (5). Lec. 1, Lab. 8. Pr., VM 465. Any quarter by arrangement. Groth
A detailed study of the gross and microscopic pathology of the neoplasms of the domestic animals.

621-622. Advanced Anatomy (5-5). Lec. 2, Lab. 9. Pr., permission of instructor. Any quarter by arrangement. Fitzgerald and Whiteford
A. Cardio-vascular Anatomy. B. Anatomy of the Uro-genital System. C. Neuroanatomy. D. The Anatomy of the Locomotor System, and E. The Anatomy of the Special Senses.

624. Experimental Neuroanatomy (5). Lec. 2, Lab. 9. Pr., VM 621-622 (C) Neuroanatomy. Any quarter by arrangement. Fitzgerald and Whiteford
A study of results of especially oriented experimental lesions of the central nervous system employing the Horsley-Clark stereotaxic instrument.

625-626. Advanced Histology of Domestic Animals (5-5). Lec. 2, Lab. 9. Any quarter by arrangement. Fitzgerald and Whiteford
A detailed study of special phases of the microscopic structure of animal tissues and organs.

631. Advanced Pathological Physiology (5). Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in physiology. Clark
A study of the physiological response of the body to disease. It is an attempt to explain the signs and symptoms of diseases based on physiological principles. The diseases discussed will be those of the liver, kidney and digestive systems.

632. Advanced Pathological Physiology (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor. Clark
A physiological explanation of abnormalities of the reproductive and endocrine systems.

633. Advanced Pathological Physiology (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of instructor. Clark
Those abnormalities of the nervous system which lend themselves to a physiological explanation.

635-636. Advanced Veterinary Pharmacology (5-5). Lec. 3, Lab. 4. Any quarter by arrangement. Pr., VM 436, VM 437, VM 438. Clark and Woodley
A detailed study of the pharmacology of some of the more important drugs used in veterinary medicine. In the laboratory, the students will have an opportunity to determine the pharmacology of the drugs on the horse, cow, pig, and dog.

638. Digestive Processes in Domestic Mammals (5). Lec. 5. Any quarter by arrangement. Pr., VM 421 or its equivalent. Burns
A detailed study of the enzymatic and bacterial digestion as well as the motility of the gastro-intestinal tract in farm animals.

639. Small Animal Nutrition (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in physiology. Burns
Requirement of amino acids, fats, carbohydrates, minerals and vitamins for dogs, cats and other small animals. Nutritional antagonists and symptoms of nutritional deficiencies in the animals.

643. Veterinary Radiation Biology (5). Lec. 4, Lab. 3. Any quarter by arrangement. Pr., permission of the instructor and acceptable courses in chemistry and animal physiology. Clark
A study of the instruments used for radiation detection, isotope techniques, and diagnostic tests used in animals, and the effects of radiation on animal tissues. The isotopes will be primarily gamma emitters.

645. Electrocardiology and Blood Vascular Physiology (5). Any quarter by arrangement. Pr., permission of instructor and acceptable courses in physiology. Clark
A study of the physiology of the blood vascular system and the advanced techniques used in electrocardiology.

647. Canine Neurosurgery (5). Lec. 2, Lab. 6. Any quarter by arrangement. Pr., permission of the instructor. Hoerlein and Clark
The study of the applied anatomy, physiology, physical and radiographic diagnosis, and surgical correction of lesions (especially those of traumatic origin) affecting the nervous system of the dog.

651-652. Advanced Large Animal Surgery (5-5). Lec. 1, Lab. 8. Any quarter by arrangement. Gibbons, Vaughan and Walker
Research in surgery. Advanced techniques for surgical procedures in the domestic animals.

654-655. Advanced Large Animal Medicine (5-5). Lec. 1, Lab. 8. Any quarter by arrangement. Gibbons and Wiggins
Special study of the causes, methods of diagnosis, treatment and methods of control and eradication of selected non-surgical diseases of domestic animals.

657-658. Breeding Diseases of Animals (5-5). Any quarter by arrangement. Gibbons
A research course for graduate study of fertility in domesticated animals, but particularly, investigation into the etiology, pathogenesis, and treatment of sterility and impaired fertility. Diseases of pregnancy and parturition are also included.

660. Advanced Small Animal Surgery (5). Lec. 1, Lab. 10. Any quarter by arrangement. Hoerlein
Techniques in general small animal surgery.

662. Advanced Small Animal Orthopedic Surgery (5). Lec. 1, Lab. 10. Any quarter by arrangement. Hoerlein
New techniques in general orthopedic surgery.

663. Advanced Small Animal Eye Surgery (5). Lec. 1, Lab. 10. Any quarter by arrangement. Hoerlein
New techniques in eye surgery.

664-665. Advanced Small Animal Medicine (5-5). Lec. 1, Lab. 10. Any quarter by arrangement. Hoerlein
Special study of the causes, methods of diagnosis, treatment and control of non-surgical diseases of small animals.

666. Advanced Canine Neurology (5). Lec. 3, Lab. 6. Any quarter by arrangement. Hoerlein
Special study of etiology of diagnosis, treatment and control of neurological diseases of the dog.

667. Normal Radiological Anatomy (5). Lec. 4, Lab. 2. Any quarter by arrangement. Geary
A detailed study of the normal structure, size and position of the various organs as they appear on flat and contrast radiographs.

668. Advanced Radiology (5). Lec. 1, Lab. 8. Any quarter by arrangement. Geary
A detailed study of advanced radiographic techniques including fluoroscopy, uses of contrast mediums, and the principles of image intensification and cineradiography.

669. Radiological Interpretations (5). Lec. 1, Lab. 8. Any quarter by arrangement. Pr., VM 667. Geary
Advanced study of radiological interpretation of pathological lesions of domestic animals.

671. Small Animal Cardiovascular Surgery (5). Lec. 1, Lab. 10. Any quarter by arrangement. Hoerlein and Horne
Application of accepted, as well as the recently developed techniques of cardiovascular surgery.

696. Seminar (0). Non-credit course required of all graduate students in Veterinary Medicine. Staff
Meets regularly at scheduled intervals each year during Spring Quarter.

698. Research Problems (2 to 5). Credit to be arranged. Staff

699. Research and Thesis; credit to be arranged. Staff

Zoology-Entomology (ZY)

Professors Arant, Baker, Dendy, Eden, Good, Guyton, Pearson, and Swingle
Research Lecturer Porter
Associate Professors Arthur, Blake, Dusi, K. Hays, Ivey, Lawrence, Mecham
Ottis, Prather, and Turner
Assistant Professors D. Hays, F. Lawrence, and Shell
Instructors Ingle and Sanford
Graduate Assistants Frady, Kimbrough, and Tyer

The courses in this department are designed to teach the fundamental and economic principles of animal biology; they are especially planned to serve students in Agriculture, Agricultural Education, Education, Home Economics, Laboratory Technology, Pre-Medicine, Secondary Education, Science and Literature, Veterinary Medicine, and Zoology.

Courses have been arranged for those students desiring to major or minor in Entomology, Fisheries Management, Wildlife Management, and other Zoological sciences. There are many opportunities for well trained students in the field of Entomology, Fisheries and Wildlife Management, and Zoology. The various divisions of the United States Department of Agriculture use trained men and women for research, extension, and regulatory work in combating insects, rodents and other pests. The Department of Interior, Fish and Wildlife Service, uses biologists in connection with wildlife research and management. The U.S. Soil Conservation Service offers employment to those trained in impounded water management for fish culture. State Departments of Agriculture use trained men for regulatory and inspection service. The research, extension, and teaching staffs of colleges and universities are also fields of opportunity as are commercial organizations in various phases of zoological work.

100. Zoological Orientation (0). Lec. 1. Fall. Staff
Historical and current concepts embodied in various disciplines of the zoological sciences.

101. General Zoology (5). Lec. 4, Lab. 2. All quarters. Staff
The principles of animal biology emphasizing metabolism, growth, reproduction, and inheritance; structure, habit, function, distribution, and economic importance of non-chordate animals.

102. General Zoology (5). Lec. 4, Lab. 2. Pr., ZY 101. All quarters. Staff
A study of the structure, habits, development, function, distribution, heredity, and economic importance of chordate animals.

204. Insects (3). General elective. Blake
An introduction to the study of life processes, occurrence, and importance of insects. (May not be taken for credit by students who have already earned credit in a more advanced course in entomology.)

205. Wildlife Conservation (3). Fall. General elective. Hays
The conservation and natural history of important wildlife animals, especially Alabama fish, amphibians, reptiles, birds and mammals. Some field trips may be required, as substitute for part of the scheduled lectures.

206. Conservation in the United States (3). Winter, Spring, Summer. General elective. Good
The basic facts essential to an understanding of current problems pertaining to the conservation of our rapidly depleting natural resources such as soil, water, minerals, forest, and wildlife. Especially planned for elementary and high school teachers.

207. Birds (3). Lec. 3. Fall, Summer. General elective. Good
Birds in relation to agriculture and game management, recognition of various species as to flight, color markings, songs, and feeding habits.

210. Fish Culture (3). Lec. 3. Winter. General elective. Dendy
Introduction to the construction and management of ponds, and the principles underlying fish production; also fishing methods, bait production, and the identification of the more common sport fish.

214. Vertebrate Physiology and Anatomy (5). Lec. 4, Lab. 3. Fall. Pr., ZY 102. Ottis
A survey of the function and structure of the organ systems of the vertebrate. This offering is aimed primarily to fill the needs of students in the Schools of Agriculture and Education. It cannot be used as a prerequisite to ZY 424.

300. Genetics (5). Lec. 4, Lab. 3. Fall, Spring. Pr., ZY 101-2 or BY 101-2 and MH 107 or 111. Mecham
Designed to acquaint the student with basic genetic principles, theoretical basis for genetic systems, and modern areas of research. Laboratory work emphasizes experiments with the fly, **Drosophilia**.

301. Comparative Anatomy (5). Lec. 3, Lab. 6. Fall, Winter, Summer. Pr., ZY 101-2. Mecham
Comparison of the systems of the vertebrates.

302. Vertebrate Embryology (5). Lec. 3, Lab. 6. Winter, Spring. Pr., ZY 101-2. Ivey
A consideration of the details of fertilization, cleavage, morphogenesis, and organogenesis of the amphioxus, frog, chick, pig, and human from a descriptive and analytical viewpoint. Laboratory work will consist of a study of prepared material supplemented with available living material.

303. Medical Parasitology (5). Lec. 3, Lab. 6. Winter. Pr., ZY 101-2. Guyton
A biological study of the parastic flatworms, roundworms, and protozoa with special emphasis on the distribution, life cycle, diagnosis, prevention, and control of forms affecting the health of man. Consideration will be given to the interrelationship between helminths of man and other animals.

304. General Entomology (5). Lec. 4, Lab. 3. Fall, Summer. Pr., ZY 101-2. Good
The general characteristics and habits of the orders and families of the Class Insects.

305. Forest Entomology (5). Lec. 4, Lab. 2. Spring. Pr., ZY 101. Pearson
Principles of entomology in relation to insects of forests and forest products; recognition, life histories, and control of major insects of forests.

306. General Animal Ecology (3). Lec. 2, Lab. 3. Spring. Pr., 10 hours of general zoology or permission of instructor. K. Hays
An introduction to the physical and biotic factors of the environment and how these factors affect animal life. The effects of one animal or group of animals on another animal or group.

308. Micrology (5). Lec. 3, Lab. 6. Fall, Winter. Pr., ZY 101-2. Dusi
Methods of fixation, imbedding, sectioning, staining and mounting tissues of the vertebrates and invertebrates.

312. Practical Fish Culture (5). As arranged. Swingle
Credit will be arranged for 3 months work in a state or federal hatchery or in an approved commercial hatchery or on other phases of fish culture.

401. Invertebrate Zoology (5). Lec. 3, Lab. 6. Winter. Pr., ZY 101-2 and junior standing. Dendy
The biology, taxonomy, and ecology of invertebrate animals.

402. Economic Entomology (5). Lec. 4, Lab. 3. Fall, Spring, Summer. Pr., junior standing. Guyton
A consideration of the biological aspects, life histories, and control of insects.

404. Medical Entomology (5). Lec. 4, Lab. 3. Spring. Pr., ZY 304 and junior standing. Hays
Insects, mites, and ticks of parasitological or medical importance to man. Emphasis will be placed on the role of arthropods in the transmission of protozoan and other diseases and the prevention of these diseases by controlling their arthropod vectors.

405. Forest Insects (5). Lec. 4, Lab. 3. Fall. Pr., ZY 304, 305, or 402 and junior standing. Hyche
Principal insects of forests and forest products; their importance, taxonomy, bionomics, and control. Emphasis will be placed on life histories and habits, identification by morphological characteristics and type of damage, and control by chemical, biological, and cultural or forest-management practices.

406. Bee Culture (3). Lec. 2, Lab. 3. Spring. Pr., ZY 101 and junior standing. Guyton
Manipulation and production of bees and honey, and a consideration of bee diseases.

407. General Insect Morphology (5). Lec. 3, Lab. 6. Spring. Pr., ZY 304 and junior standing. Good
Comparative external anatomy and generalized internal structures of insects; characteristics used in taxonomy will be emphasized.

409. Histology (5). Lec. 3, Lab. 6. Spring. Pr., junior standing. Dusi
Origin, recognition, and functions of the fundamental and special tissues of the vertebrates.

410. Systematic Entomology (5). Lec. 2, Lab. 6. Winter. Pr., ZY 304 and junior standing. Good
A systematic determination of insects through orders, families, genera, and species.

411. General Parasitology (5). Lec. 3, Lab. 6. Fall. Pr., ZY 101-2 and junior standing. Turner
The origin, adaptations, physiology, and ecology of parasites. The identification and life histories of representative parasitic protozoa, helminths, and arthropods with emphasis on host-parasite relationships. Techniques of examining animals for the presence of parasites and the proper preparation of such collections for study.

414. Aquatic Insect Taxonomy (3). Lec. 1, Lab. 6. Summer, even years. Pr., ZY 304 and junior standing. Good
Collection and identification of common aquatic insects, with emphasis on the immature forms.

415. Limnology (5). Lec. 3, Lab. 6. Spring. Pr., CH 104, PS 205, ZY 101-2, and junior standing. Dendy
Biological, chemical, and physical factors affecting aquatic life.

421. Vertebrate Zoology I (5). Lec. 3, Lab. 6. Spring. Pr., ZY 102 and junior standing. Mecham
The taxonomy, ecology, and evolution of fishes, amphibians, and reptiles.

422. Vertebrate Zoology II (5). Lec. 3, Lab. 6. Fall. Pr., ZY 102 and junior standing. Dusi
The basic taxonomy, ecology, evolution, and some biological principles of birds and mammals.

424. Animal Physiology (5). Lec. 4, Lab. 3. Fall, Winter. Pr., ZY 301 and junior standing. Ottis
A systematic study of the physiology of the nervous system, special senses, circulation, respiration, digestion, kidney function, hormonal control, and reproduction. An effort is made to acquaint the student with methods of experimentation as a means for the direct acquisition of physiological facts.

426. Principles of Game Management (5). Lec. 4, Lab. 3. Fall. Pr., ZY 101-2 and junior standing. Pearson
Fundamentals of game management theory, techniques, and administration.

428. Hatchery Management (5). Lec. 3, Lab. 4. Spring. Pr., junior standing. Prather
Operation of hatcheries for the production of cold- and warm-water game fish and bait minnows; care of brood fish; methods of stocking, fertilizing, supplementary feeding, and controlling weeds; transportation of fish; control of parasites; and related hatchery problems.

430. Principles of Heredity (5). Lec. 5. Winter, Summer. Pr., ZY 101-2 or BY 201-2 and junior standing. Staff
A survey course in the science of genetics designed for students who will not take additional courses in genetics. The basic facts essential for an understanding of the mode of inheritance in plants and animals will be presented in a non-technical manner. Credit may not be allowed for both ZY 430 and ZY 300. Restricted to students in Education except by special permission.

431. Field Zoology (5). Lec. 2, Lab. 6. Summer. Pr., Teaching Experience and junior standing. Staff
Designed to give secondary teachers a knowledge of natural history and field identification of common animals of this region. The collection and preparation of specimens for classroom use will be included. Restricted to students in Education except by special permission.

432. Animal Biology (5). Lec.-Dem. 5. Summer. Pr., Teaching Experience and junior standing. Staff
Principles of animal biology with emphasis on the structure and function of the human body. Preparation and utilization of demonstration material will be stressed. Restricted to students in Education except by special permission.

435. Marine Biology (3). Lec. 3. Fall. Pr., acceptable chemistry background and junior standing. Staff
Introduction to the physical, chemical, and biological characteristics of the marine environment.

436. Management of Small Impoundments (3). Lec. 1, Lab. 6. Summer. Pr., junior standing. Swingle
A consideration of the species of fish used in the management of small impoundments, species balance, population balance analysis, methods of correcting unbalanced conditions, renovation of old impoundments and related problems of water management.

437. Fisheries Biology (3). Lec. 3. Winter. Pr., junior standing. Shell
An introduction to the study of vital statistics of fish populations.

438. Wildlife Techniques (3). Lec. 1, Lab. 6. Fall. Pr., ZY 101-2 and junior standing. Staff
Field and laboratory techniques employed in wildlife management and research; familiarization with wildlife literature.

498. Special Problems (1-3). Pr., senior standing. Staff
A. Zoology; B. Entomology; C. Fisheries Management; D. Wildlife Management. A student can register for a total of not more than three hours credit.

GRADUATE COURSES

The Department of Zoology-Entomology offers graduate training on the Master's and Doctoral levels. Students desiring graduate training in zoology, entomology, fisheries management, or wildlife management should have a degree from a recognized institution with adequate undergraduate training in zoology, botany, chemistry, physics, and mathematics. The training should include 30 hours of biological science related to the major subject. Training in agricultural subjects is essential also except for majors in zoology. Qualified students lacking one or more prerequisite subjects may be admitted but will be required by the departmental advisory committee to make up the prerequisites without credit.

The Auburn University Agricultural Experiment Station has at present active research projects in entomology, fisheries management, wildlife management, and zoology. These projects afford an opportunity for part-time employment by graduate students on a two-year basis as graduate assistants. There are also graduate assistantships in connection with the teaching program.

The Farm Ponds project has approximately 150 ponds of various sizes which are available for use in training graduate students. Facilities of the Cooperative Wildlife Research Units are available for use in training graduate students in wildlife management. This unit is operated cooperatively by Auburn University, State Department of Conservation, the Fish and Wildlife Service of the Department of Interior and the Wildlife Management Institute. Facilities of the Experiment Station at Auburn and at the various sub-stations and experiment fields located in all parts of the state are available for conducting research in connection with these projects in entomology. Excellent laboratory facilities are available for studies in insect physiology, insect toxicology, and economic entomology. Theses are required of all students.

Students devoting full time to graduate studies may complete the M.S. degree within a minimum of one calendar year. The doctoral degree requires a minimum of three school years or nine quarters beyond the B.S. degree. Students on one-half time assistantships require two calendar years for completion of the M.S. degree or four calendar years for the completion of the Ph.D. degree. Part of the doctoral work may be done in absentia if necessary arrangements are made in advance.

Graduate degrees offered in the Department of Zoology-Entomology are Master of Science and Doctor of Philosophy. Areas of specialization are entomology, fisheries management, wildlife management, or zoology proper.

Comprehensive examinations will be given to all candidates for Master's and Doctoral degrees. Master's degree candidates may receive written examinations at the discretion of the candidate's faculty-advisory committee and will be given an oral examination. All students in the doctoral program will be given comprehensive written and oral qualifying examinations prior to admittance to candidacy for degree. When the thesis work has been completed a final oral examination will be held.

In all of these fields there are opportunities in research, in state experiment stations, government divisions, and commercial organizations. There are other opportunities as extension workers, biologists in Soil Conservation Service, regulatory and inspection service in the U.S. Plant Pest Control Division, as teachers in high schools and colleges, and in state departments of agriculture.

601. Insect Morphology (3). Lec. 1, Lab. 6. Fall. Pr., ZY 407. **Good**
Detailed studies of the internal structures of insects.

602. Advanced Insect Taxonomy (5). Lec. 1, Lab. 8. Spring. Pr., ZY 410. **Good**
A detailed study of the classification of insects. Special emphasis is placed on the classification of orders and families of insects in which the student is interested.

603. Insect Physiology (5). Lec. 3, Lab. 6. Fall. Pr., ZY 424 and ZY 601. **Ottis**
General and comparative physiology of the organ systems of insects. A minimum of two literature reviews will be made by each student during the quarter.

604. Insect Toxicology (5). Lec. 4, Lab. 3. Winter. **Eden**
Toxic action of insecticides; analysis, preparation and use of insecticides; spray residues in relation to health; research methods in insect toxicology.

605. Ornithology (5). Lec. 3, Lab. 6. Spring. **Dusi**
The taxonomy, ecology, and life history of the birds of southeastern United States.

606. Mammalogy (5). Lec. 3, Lab. 6. Winter. Pr., ZY 420. **Dusi**
The life history, ecology, and taxonomy of mammals, with special reference to game, fur-bearing, and predator groups; preparation of skins and pelts for study and display.

607. Farm Game Management (5). Lec. 3, Lab. 6. Fall. Pr., ZY 426. Pearson
This course is designed for graduate students majoring in Game Management or Fisheries Management. Application of game management theories, techniques, and administration with special emphasis on farm game species.

608. Forest and Range Game Management (5). Lec. 3, Lab. 6. Winter. Pr., ZY 426. Pearson
For graduate students majoring in Game Management or Fisheries Management. Application of game management theories, techniques, and administration with special reference to forest and range game.

609. Advanced Applied Entomology (5). Lec. 4, Lab. 3. Fall. Pr., ZY 402. Guyton
Methods of insect control including inspection, quarantines, and other legal procedures; insecticidal, biological, and cultural control; principal pests of United States; pests likely to be imported.

610. Immature Forms of Insects (5). Lec. 2, Lab. 6. Winter. Pr., ZY 410. Hays
Structure and identification of immature forms of insects; methods of collecting and preserving; development and use of keys for classifying immature insects.

611. Advanced Insect Morphology and Embryology (3). Lec. 1, Lab. 6. Spring. Pr., ZY 601. Blake
Insect morphology in relation to comparative embryological development of insects.

612. Advanced Insect Toxicology (5). Lec. 4, Lab. 3. Spring. Pr., ZY 604. Arthur
Mode of action, mode of entry, relation of chemical structure to toxicity, and precision methods of determination of insecticides; recent developments in the field of insecticide chemistry.

614. Physiology of the Cell (3). Lec. 3. Winter. Pr., ZY 424 and Organic Chemistry. Ottis
An examination of the basic physiological processes at the cellular level with the tools and approaches of physical science.

615. Advanced Fisheries Biology (3). Lec. 2, Lab. 3. Fall. Pr., ZY 437. Shell
Studies of the concepts of population dynamics, yield prediction equations, and the interaction of reproduction, growth, and mortality in fish populations.

616. Systematic Ichthyology (5). Lec. 1, Lab. 8. Spring. Pr., ZY 421. Staff
Principles of classification and the construction and utilization of keys for the identification of fishes.

617. Advanced Limnology (5). Lec. 3, Lab. 6. Winter. Pr., ZY 415. Dendy
Principles and methods employed in modern limnological research.

618. Fish Culture (2). Lec. 2. Winter. Swingle
Cultural practices used in the production of fish for food.

621. Management of Streams and Large Impoundments (5). Lec. 4, Lab. 3. Summer. Shell
Fish populations of streams and large impoundments and a consideration of methods for the management of these populations.

622. Zoological Literature (5). Lec. 3, Lab. 6. Winter. Pr., graduate standing. Guyton
A study of zoological literature including journals, indexes, abstracting services, and standard references. For laboratory each student is required to review, abstract, and present written and oral reports on published results of research in his major field.

623. Organic Evolution (3). Lec. 3. Winter. Pr., ZY 430 or ZY 300. Mecham
A consideration of evolutionary principles as illustrated by the various biological disciplines, particularly genetics, systematics, and paleontology.

624. Advanced Animal Physiology (5). Lec. 3, Lab. 6. Winter. Pr., ZY 424. Ottis
The neuromuscular, neurocirculatory, and neurohormonal basis for animal behavior. A minimum of two literature reviews will be required of each student during the quarter.

628. Endocrinology (5). Lec. 3, Lab. 6. Spring. Pr., ZY 424 and Organic Chemistry. Ottis
This course is designed for qualified students in animal biology who wish to make a rigorous study of the animal hormones. Operative removal of glands and studies before and after treatment will be made in the laboratory.

630. Advanced Genetics (5). Lec. 3, Lab. 4. Fall, odd years. Pr., ZY 300. Ivey
A continuation of ZY 300 emphasizing embryological effects, plasmagenes, speciation, effect of environment, biochemical genetics, and cytogenetics.

631. Advanced Embryology (5). Lec. 3, Lab. 4. Winter, odd years. Pr., ZY 302 and ZY 308. Ivey
Fertilization, mechanism of cleavage, origin of asymmetry, gastrulation, organ-forming substances, cell lineage, effects of centrifugation, parthogenesis, histogenesis, metabolism of the embryo, and effects of environment will be studied. Laboratory work will be done on chick, frog, insect, mollusk, fish, or other animal of special interest to the student.

632. Helminthology (5). Lec. 3, Lab. 6. Spring. Pr., ZY 411. Turner
Advanced studies of the morphology, physiology, life cycles, and host-parasite relationships of helminths. Opportunity for making extensive literature studies and collections of the parasites of a particular group of animals in which the student is most interested.

634. Protozoology (5). Lec. 3, Lab. 6. Winter, even years. Pr., ZY 411. Turner
A study of both free-living and parasitic protozoa important to agriculture, wildlife, and man. Morphology, physiology, reproduction, ecology, and life histories of parasitic forms will be emphasized.

635. Furbearer and Waterfowl Management (5). Lec. 3, Lab. 4. Winter. Pr., ZY 426. Pearson
For graduate students with a major or minor in wildlife management. A study of furbearer and waterfowl resources. Emphasis is placed on problems of management and utilization.

636. Ecology of Animal Populations (3). Lec. 3. Fall. Pr., ZY 306. K. Hays
An investigation of the balance of nature, population cycles, natural regulation of animal numbers, competition, epizootics, and the compensatory adjustments of populations to changes in the environment.

637. Herpetology (3). Lec. 2, Lab. 3. Winter, odd years. Pr., ZY 421. Mecham
A study of the morphology, taxonomy, ecology, and behavior of amphibians and reptiles. Laboratory collecting, preserving, and identification of local specimens will be an important consideration.

640. Nematology (3). Lec. 2, Lab. 3. Spring. Pr., ZY 632. Cairns
Advanced study of free-living and plant- and animal-parasitic nematodes. Detailed consideration of aspects of morphology, reproduction, development, responses, physiology, and ecology.

641. Field Entomology (3). Lec.-Dem. 4. Fall or Spring. Pr., graduate standing.
Identification of more important orders, families, and species of insects; a consideration of morphology, physiology, and development of insects; control of major pests. A collection of at least 100 species of economic insects will be required.

642. Chemical Control of Insects (3). Lec.-Dem. 4. Winter. Pr., graduate standing.
Properties of insecticides, including toxic action in living organisms; major uses and methods of application of formulations; hazards involved in handling insecticides; spray residues in relation to marketability of crops.

643. Heredity and Evolution (5). Lec.-Dem. 5. Summer. Pr., 10 hours of general biology, botany, or zoology and teaching experience. Staff
Principles of genetics and evolution as encountered by secondary teachers with emphasis on economic aspects. Common misconceptions regarding heredity and evolution will be discussed.

693. Seminar. Credit to be arranged. Staff

698. Special Problems (2-5). All quarters. Staff
A. Zoology; B. Entomology; C. Apiculture; D. Parasitology; E. Physiology; F. Fisheries Management; G. Wildlife Management.

699. Research and Thesis. Credit to be arranged. Staff

799. Doctoral Research and Dissertation. Credit to be arranged. Staff

Councils and Committees

1963-1964

ADMINISTRATIVE COUNCIL

The President, Executive Vice President, Assistant to the President, Dean of Faculties, Dean of the Graduate School, Director of Agricultural Extension Service, Director of Agricultural Experiment Station System, Director of Buildings and Grounds, Business Manager, Director of University Relations, Director of Development, Director of Institutional Research.

COUNCIL OF DEANS

The President, Executive Vice President, Dean of Faculties Huntley (Chairman), Deans Allen, Cater, Coker, Foy, Greene, Parker (ex officio), Pierce, Pumphrey, Saunders, Smith, Speer, Spidle; Colonels Johnson, Williams; Captain Curtis; Messrs. Brumfield, Cantrell, C. W. Edwards.

GRADUATE COUNCIL

The President, Executive Vice President, Dean of Faculties (ex officio), W. V. Parker (Chairman), W. S. Bailey (Vice Chairman), L. P. Burton, J. D. Capps, S. T. Coker, W. T. Dalton, B. T. Lanham, F. T. McCann, K. Ottis, R. L. Partin, W. D. Spears, M. Sykes, D. M. Vestal, C. H. Weaver, Rebecca Roden (Secretary).

RESEARCH COUNCIL

W. S. Bailey (Chairman), W. M. Andrews, B. W. Arthur, R. J. Bear, K. Brenkert, E. Current-Garcia, E. Ikenberry, W. C. Jonson, J. E. Land, S. C. McIntyre, M. C. McMillan, H. R. Seibold, Coyt Wilson.

COMMITTEES

Academic Honesty—
W. A. Tincher, W. B. Bunger, Jeannetta Land, J. H. Yeager, three students.

Admissions (Undergraduate)—
E. J. Brumfield, W. Hinton, W. A. Tincher, Mildred Van de Mark, Howard Strong.

Awards—
S. T. Coker, Katharine Cater, Clercie Edwards, J. T. Hood, M. Sykes, J. D. Wade.

Athletics—
R. W. Allen, W. S. Bailey, F. Davis, W. T. Ingram, J. B. Sarver, C. R. Saunders, C. F. Simmons.

Calendar—
C. W. Edwards, K. M. Autrey, G. W. Beard, B. T. Lanham, C. R. Saunders, W. A. Speer.

Campus Planning—
L. E. Funchess, W. T. Ingram, F. M. Orr, F. H. Pumphrey, E. V. Smith, W. A. Speer.

Class Schedules—
C. W. Edwards, C. P. Anson, J. R. Briney, Clercie Edwards, T. H. Ellis, W. R. Patrick, C. F. Simmons, J. E. Swanson, J. D. Wade.

Concessions Board—
O. W. Bickel, Katharine Cater, A. A. Miller, E. B. Taylor, and three student members.

Courses and Curricula—
M. C. Huntley, C. H. Cantrell, C. W. Edwards, Charles Kelley, W. V. Parker, C. F. Simmons.

Discipline—
For Men: R. C. Anderson, A. G. W. Johnson, C. R. Saunders, E. V. Smith, one student.
For Women: Katharine Cater, Jeannetta Land, Laura Newell, one student.

Exchange Fellowships—
M. C. Huntley, E. Current-Garcia, C. R. Saunders.

Fraternities—
G. W. Beard, Katharine Cater, G. J. Cottier, J. E. Foy, one student member.

Health—
M. W. Brown, A. E. Fourier, J. E. Foy, Mildred Van de Mark.

High School Relations—
H. N. Hawkins, E. J. Brumfield, Katharine Cater, Clercie Edwards, J. E. Foy, Howard Strong, W. A. Tincher, one student member.

Honor Societies—
E. O. Price, F. M. Orr, C. H. Weaver.

Insurance—
R. C. Anderson, W. T. Ingram, C. C. Stalnaker.

Lectures and Concerts—
Katharine Cater, R. C. Cargile, C. E. Cook, E. M. Crawford, E. Justice, J. E. Kendrick, J. H. Liverman, T. B. Peet, three student members.

Library—
C. H. Cantrell, R. W. Allen, A. H. Groth, G. M. Hocking, J. E. Land, K. Ottis, G. E. Tanger, R. L. Saunders, Lilly Spencer, W. A. Speer.

Mental Health—
M. W. Brown, Katharine Cater, J. E. Foy, R. W. Mayer.

Nuclear Science—
W. M. Andrews, H. E. Carr, C. H. Clark, S. T. Coker, D. E. Davis, W. V. Parker, C. R. Saunders, R. D. Spann, C. H. Weaver, Coyt Wilson, R. E. Wingard, D. M. Vestal.

Orientation—
C. W. Edwards, O. W. Bickel, E. J. Brumfield, C. H. Cantrell, Katharine Cater, Clercie Edwards, J. E. Foy, J. M. Richardson, one student member.

Portrait—
L. E. Funchess, Berta Dunn, Pattie Haney, A. W. Reynolds, J. B. Sarver, M. Sykes.

Radiological Safety—
C. H. Clark, W. M. Andrews, H. E. Carr, D. E. Davis, L. E. Funchess, G. W. Hargreaves, G. M. Kosolapoff, H. R. Thacker, H. Zallen (Radiological Safety Officer).

Registration—
C. W. Edwards, C. P. Anson, F. W. Applebee, J. R. Briney, R. C. Cargile, S. T. Coker, Clercie Edyards, T. H. Ellis, A. E. Fourier, G. C. Foster, D. D. Hall, W. M. Hines, J. L. Jeff, DeWitt Mullins, W. V. Parker, W. R. Patrick, Rebecca Roden, C. F. Simmons, Lilly Spencer, H. Strong, W. A. Tincher, J. D. Wade, H. T. Wingate.

Religious Life—
John Deloney, J. H. Blackstone, L. P. Burton, D. A. Collins, J. C. Green, four student members.

Research Grant-in-Aid—
S. C. McIntyre, W. S. Bailey, (Ex-officio), R. W. Ball, Karl Brenkert, W. B. Bunger, M. J. Burns, J. E. Kendrick, F. T. McCann, K. Ottis, T. B. Peet, Eithel Rose.

Social Life—
Katharine Cater, G. W. Beard, Frank Davis, J. E. Foy, Mary George Lamar, Jeannetta Land, five student members.

Student Financial Aid—
J. E. Greene, F. S. Arant, Karl Brenkert, R. C. Cargile, Katharine Cater, J. F. Dunlap, R. B. Strong, Mrs. Robert R. Chesnutt (Secretary).

Student Publications—
J. E. Foy, P. C. Burnett, E. M. Crawford, W. T. Ingram, five student members.

Traffic—
L. E. Funchess, L. O. Abney (Ex-officio), O. W. Bickel, Cliff Godfrey, J. T. Hood, E. O. Jones, S. L. Thompson, Coyt Wilson, four student members.

Union—
J. E. Foy, Katharine Cater, C. E. Cook (Ex-officio), F. Davis, W. T. Ingram, Mary George Lamar, J. B. Sarver, Chairman of Faculty Council, President of Faculty Club, eight students.

University Relations—
E. M. Crawford, Trudy Cargile, R. Chesnutt, Ruth Faulk, J. E. Foy, H. N. Hawkins, J. Roden, K. B. Roy, J. B. Sarver, J. E. Swanson, E. Wegener, L. B. Williams, one student member.

Faculty and Staff

OFFICERS OF INSTRUCTION

1962-1963

(The first date after the title indicates the year of first appointment to any position in the institution; the second, the year of appointment to present rank. Effective date of resignation shown only for persons whose names were not carried in a previous catalog.)

DRAUGHON, RALPH BROWN ..... *President*, 1931, 1948
B.S., M.S., Auburn University; LL.D. (Honorary) Birmingham-Southern College.

ANDERSON, ROBERT C. ..... *Executive Vice-President*, 1961
B.S., Auburn University; M.A., University of North Carolina; Ph.D., New York University.

**VALLERY, H. F. ..... *Assistant to the President*, 1950, 1960
B.A., M.A., Louisiana State University; M.A., Ed.D., Columbia University.

HUNTLEY, MICHEL C. ..... *Dean of Faculties*, 1949
B.A., Millsaps College; M.A., Emory University; LL.D., Millsaps College; Litt.D., University of Miami.

EMERITI, 1962

ALLISON, FRED ..... *Professor Emeritus of Physics, March*, 1961
A.B., Emory and Henry College; M.A., Ph.D., University of Virginia.

ATKINSON, T. P. ..... *Professor Emeritus of Foreign Languages, March*, 1961
Ph.B., A.B., Lebanon University; M.A., University of Georgia.

CAMP, E. W. ..... *Professor Emeritus of Textile Technology, March*, 1961
B.S., Georgia School of Technology; M.S., Auburn University.

EATON, W. H. ..... *Associate Professor Emeritus of Dairy Husbandry, March*, 1961
B.S., North Carolina State College.

GRIMES, J. C. ..... *Professor Emeritus of Animal Husbandry and Nutrition, March*, 1961
B.S., University of Tennessee; M.S., University of Kentucky.

HILL, W. W. ..... *Professor Emeritus of Electrical Engineering, March*, 1961
B.S., M.S., M.E., Auburn University; E.E., University of Wisconsin; M.E.E., Johns Hopkins.

ISBELL, C. L. ..... *Professor Emeritus of Horticulture, March*, 1961
B.S., Auburn University; M.S., Ph.D., Michigan State University.

JONES, DAN T. ..... *Professor Emeritus of Industrial Laboratories, June*, 1961
Diploma, Auburn University.

KUDERNA, JEROME ..... *Professor Emeritus of Education, June*, 1962
B.S., M.A., Michigan State University.

PITTS, JOHN A. ..... *Associate Professor Emeritus of Mathematics, March*, 1961
B.S., E.E., Auburn University.

ROE, JOHN W. ..... *Associate Professor Emeritus of Foreign Languages, March*, 1961
A.B., M.A., Cornell University.

SAHAG, L. M. ..... *Professor Emeritus of Engineering Graphics, March*, 1961
B.S., University of North Carolina; M.S., Auburn University.

SHOWALTER, B. R. ..... *Professor Emeritus of Education, March*, 1961
A.B., Oberlin College; M.A., Ph.D., Columbia University.

THOMAS, ALBERT L. ..... *Professor Emeritus of Engineering Graphics, March*, 1961
B.S., M.Sc., M.E., Auburn University.

ABNEY, LOUIS O. ..... *Associate Professor of Art*, 1950, 1959
B.App.Art, M.App.Art, Auburn University.

ADAMS, CLEVELAND L. ..... *Head Professor of Textile Technology*, 1952
B.T.E., Auburn University.

ADAMS, FRED ..... *Associate Professor of Soils*, 1955
B.S., M.S., Louisiana State; Ph.D., California.

** On leave.

*ALBERT, ROOSEVELT A. — *Instructor in Small Animal Surgery and Medicine*, 1962
D.V.M., Auburn University.

ALBRITTON, WILLIAM P., JR. — *Instructor in Electrical Engineering*, 1962
B.S.E.E., Auburn University.

ALEXANDER, JESS McF. — *Assistant Professor of Architecture*, 1960
A.B. Winthrop College; M.A., Columbia; Art Students League, N.Y.; School of Art Institute, Chicago; Atelier Ziegler and Academie Montartre, Paris.

ALFORD, MARGARET S. — *Instructor of Bacteriology*, 1961
B.S., Western Kentucky State College; M.S., University of Kentucky.

*ALVORD, MARY K. — *Instructor in Mathematics*, 1942
B.S., Illinois.

*AMACHER, ANNE W. — *Assistant Professor of English*, 1962
B.A., Agnes Scott; M.A., Radcliffe; Ph.D., New York.

AMACHER, RICHARD E. — *Associate Professor of English*, 1957
A.B., Ohio; Ph.D., Pittsburgh.

AMLING, HARRY J. — *Associate Professor of Horticulture*, 1959
B.S., Rutgers; M.S., Delaware; Ph.D., Michigan State.

ANSON, CHARLES P. — *Head Professor of Economics and Business Administration*, 1946
A.B., Wisconsin; M.A., Ohio State; Ph.D., North Carolina.

ANTHONY, WILSON B. — *Professor of Animal Science*, 1953, 1955
B.S., Illinois; M.S., Texas A. & M.; Ph.D., Cornell.

APPLEBEE, FRANK W. — *Head Professor of Art*, 1926, 1932
Diploma, Massachusetts College of Art; B.S., M.App.Art, Auburn University.

ARANT, FRANK S. — *Head Professor of Zoology and Entomology*, 1926, 1949
B.S., M.S., Auburn University; Ph.D., Iowa State.

ARNOLD, DOROTHY DEAN — *Associate Professor of Home Economics*, 1929, 1957
B.S., Peabody; M.A., Columbia.

ARTHUR, B. WAYNE — *Associate Professor of Zoology and Entomology*, 1951, 1960
B.S., M.A., Auburn University; Ph.D., Wisconsin.

ASKEW, RAYMOND F. — *Assistant Professor of Physics*, 1960
B.S., Birmingham-Southern; M.S., Ph.D., Virginia.

ATKINS, ALWYN J. — *Acting Head Professor of Education*, 1956, 1961
B.S., Chattanooga; M.S., Ph.D., North Carolina.

ATKINS, GEORGE A. — *Assistant Football Coach*, 1956
B.S., Auburn University.

*ATKINS, LEAH RAWLS — *Instructor in History and Political Science*, 1958, 1962
B.S., M.A., Auburn University.

ATTLEBERGER, FREDERICK RAYMOND — *Instructor in Laboratory Technology*, 1941, 1944
M.T., Franklin School of Science and Arts.

**ATTLEBERGER, MARIE H. — *Associate Professor of Bacteriology*, 1947
D.V.M., M.S., Auburn University.

AUTREY, KENNETH MAXWELL — *Head Professor of Dairy Science*, 1947
B.S., Louisiana State; M.S., Ph.D., Iowa State.

BAGWELL, JAMES E. — *Assistant Professor of Economics and Business Administration*, 1950, 1956
B.S., M.S., North Carolina.

BAKER, JUNE MARSHALL — *Associate Professor of Chemistry*, 1957
B.S., Missouri Valley College; M.S., Ohio State; Ph.D., Missouri.

BALCH, BILLY W. — *Instructor in Economics and Business Administration*, 1960
B.S., Florence State College; M.B.A., Alabama.

BALL, RICHARD WILLIAM — *Professor of Mathematics*, 1954, 1960
B.A., M.A., Ph.D., Illinois.

BARBIN, ALLEN RAY — *Associate Professor of Mechanical Engineering*, 1961
B.S.M.E., Lamar Tech; M.S.M.E., Texas A. & M.; Ph.D., Purdue.

BARKSDALE, JELKS — *Associate Professor of Chemistry*, 1946, 1957
B.S., M.S., University of Alabama; Ph.D., Columbia.

BARKSDALE, ROBBIE ANDREWS — *Catalog Librarian and Instructor*, 1949, 1959
A.B., Alabama College; B.S.L.S., M.S.L.S., Columbia University.

* Temporary.
** On leave.

BASKERVILL, MARGARET—*Assistant Professor of Mathematics*, 1943, 1959
A.B., Randolph-Macon Woman's College; M.A., Michigan; Ph.D., Auburn University.

BASORE, CLEBURNE A.—*Head Professor of Chemical Engineering*, 1920, 1938
B.S., M.S., Auburn University; M.A., Michigan; Ph.D., Columbia.

BEALS, HAROLD O.—*Assistant Professor of Forestry*, 1960
B.S.F., M.S., Ph.D., Purdue.

BEARD, G. W. (JEFF)—*Director of Athletics*, 1937, 1951
B.S., Auburn University.

BEAUCHAMP, BESS—*Catalog Librarian and Instructor*, 1960
A.B., Hendrix College; M.A., Claremont Graduate School; M.A.L.S., Peabody College.

°BELL, LARRY L.—*Instructor in Industrial Management*, 1962
B.S.B.A., Auburn University.

BELSER, THOMAS ARVIN, JR.—*Assistant Professor of History and Political Science*, 1957
B.A., M.A., Ph.D., Vanderbilt.

BENSON, CARL—*Associate Professor of English*, 1947, 1952
B.S., M.A., Texas; Ph.D., Illinois.

°°BENTLEY, CHARLES A.—*Associate Professor of Music*, 1949, 1957
B.S., Baldwin-Wallace; M.A., Professional Diploma "Specialist in Music Education," Columbia.

BENTON, DEWARD E.—*Instructor in Economics and Business Administration*, 1961, 1962
B.S., University of Maryland.

BLACKSTONE, J. HOMER—*Professor of Agricultural Economics*, 1938, 1953
B.S., M.S., Auburn University.

BLACKWELL, PAUL HOUSTON, JR.—*Assistant Professor of Military Science*, 1962
B.S., University of Maryland; Major, USA.

BLAKE, GEORGE H., JR.—*Associate Professor of Zoology-Entomology*, 1947, 1957
B.S., M.S., Auburn University; Ph.D., Illinois.

BLAKNEY, WILLIAM G. G.—*Associate Professor of Civil Engineering (P.E.)*, 1958, 1961
B.E., Nova Scotia Technical College; M.Sc., Ohio State.

BLISS, LEORA B.—*Assistant Professor of Home Economics*, 1957
B.S., Kansas State; M.S., Oregon State.

BLISS, R. L.—*Assistant Professor of Sociology*, 1957, 1959
B.A., Mount Union College; M.A., Kentucky.

BONIN, JOSEPH—*Associate Professor of Economics and Business Administration*, 1960
B.S., Spring Hill College; M.A., Ph.D., L.S.U.

BOSTON, ROBERT O.—*Associate Professor of Economics and Business Administration*, 1950, 1959
B.S., M.S., Alabama.

BOTTOMS, DAVID NEWTON—*Associate Professor of Agricultural Education*, 1941, 1947
B.S., M.S., Auburn University.

BOVINETT, LEE R.—*Assistant Professor of Air Science*, 1960
B.S., Florida State; Captain, USAF.

BRADBERRY, GEORGE—*Assistant Football Coach*, 1951
B.S., Georgia.

BRANSON, DAN EARLE—*Associate Professor of Civil Engineering (P.E.)*, 1962
B.C.E., M.C.E., Auburn University; Ph.D., University of Florida.

BREYER, BERNARD R.—*Associate Professor of English*, 1949, 1955
B.A., Vanderbilt; M.A., Louisiana State; Ph.D., Virginia.

BRISSON, DAVID WINSLOW—*Assistant Professor of Architecture*, 1958
B.F.A., Rhode Island School of Design; M.F.A., Ohio University.

°BRISSON, HARRIET E.—*Instructor in Architecture*, 1958
B.F.A., Rhode Island School of Design; M.F.A., Ohio University.

°BROOKSHER, ISABEL L.—*Instructor in Elementary Education*, 1962
A.B., Agnes Scott; M.Ed., Georgia.

BROWN, EDNA EARLE—*Serials Librarian and Instructor*, 1952, 1959
A.B., Peabody College of Teachers; B.S.L.S., Illinois.

BROWN, HELEN WEAVER—*Instructor in Economics and Business Administration*, 1959, 1960
B.S., Alabama College; M.Ed., Auburn University.

° Temporary.
°° On leave.

°BRYANT, WARD TILLEY—*Assistant Professor of Industrial Management*, 1951, 1953
B.I.M., Auburn University; M.S., Georgia Tech.

BUDENSTEIN, PAUL P.—*Associate Research Professor of Physics*, 1958, 1962
B.A., Temple; M.S., Ph.D., Lehigh.

BUNGER, WILLIAM B.—*Associate Research Professor of Chemistry*, 1949, 1957
B.S., Washburg; M.S., Ph.D., Kansas State.

BURKHARDT, E. WALTER—*Professor of Architecture*, 1929
B.S.Arch., Washington State; M.S.Arch., Columbia.

BURNETT, PAUL C.—*Associate Professor of Journalism*, 1948, 1954
B.A., Louisiana Polytechnic Institute; M.A., Louisiana State.

BURNS, MOORE J.—*Professor of Physiology and Pharmacology*, 1950, 1962
B.S., M.S., Auburn University; Ph.D., Purdue.

BURTON, LEONARD PATILLO—*Professor of Mathematics*, 1954, 1960
A.B., M.A., Alabama; Ph.D., North Carolina.

BUTLER, ALLEN DEXTER—*Assistant Professor of English*, 1927, 1955
A.B., M.A., North Carolina.

BUTZ, ROBERT K.—*Associate Professor of Mathematics*, 1950, 1958
B.S., Colorado State; M.S., Ph.D., Georgia.

°CABRERA, DEOGRACIAS J.—*Research Associate, Pathology-Parasitology*, 1962
D.V.M., University of Philippines; LL.B., Manila Law School.

°CAIN, CHARLES J.—*Instructor in Physics*, 1962
B.A., Vanderbilt; M.S., Auburn University. (Resigned effective June 30, 1962.)

CAIRNS, ELDON J.—*Professor of Plant Pathology*, 1954, 1955
B.A., M.A., California (Los Angeles); Ph.D., Maryland.

CALLAWAY, A. BYRON—*Professor of Education*, 1956, 1960
A.B., B.S., Southwest Missouri State College; M.Ed., Ed.D., Missouri.

CAMPBELL, JOSEPH MAX—*Instructor in Electrical Engineering*, 1962
B.S.E.E., Auburn University.

°CANNON, LENA FRANCES—*Assistant Professor of Home Economics*, 1948, 1953
B.S., M.S., West Virginia.

CANNON, ROBERT Y.—*Professor of Dairy Science*, 1948, 1960
B.S., Iowa State; M.S., Ohio State; Ph.D., Wisconsin.

CANTRELL, CLYDE HULL—*Director of Libraries and Professor*, 1944, 1959
A.B., A.B.L.S., M.S., North Carolina; Ph.D., University of Illinois.

CAPPS, JULIUS DANIEL—*Research Professor of Chemistry*, 1934, 1953
B.S., M.S., Auburn University; Ph.D., Nebraska.

CARLISLE, ALMA LAURIE—*Instructor in Health, Physical Education and Recreation*, 1961
B.A., Judson; M.S., Louisiana State University.

CARLOVITZ, GILES HOMER—*Professor of Electrical Engineering (P.E.)*, 1928, 1934
B.E.E., E.E., Auburn University.

CARR, HOWARD E.—*Head Professor of Physics*, 1948, 1953
B.S., Auburn University; M.A., Ph.D., Virginia.

CARTER, JOHN LELAND—*Assistant Professor of Education*, 1962
B.A., Sam Houston State College.

CHADWICK, JAMES H.—*Associate Professor of Electrical Engineering*, 1949
B.S., U.S. Naval Academy; M.S.E.E., Columbia University.

CHASTAIN, E. D., JR.—*Associate Professor of Agricultural Economics*, 1956
B.S., Clemson; M.S., Cornell; Ph.D., Purdue.

°°CHENEY, LOUIS T.—*Assistant Professor of Art*, 1957, 1961
B.F.A., Washington.

CHRISTEN, HAROLD EDWIN—*Professor of Forestry*, 1946, 1951
B.S., Connecticut; M.F., Yale; Ph.D., Michigan State University.

CLARK, CARL H.—*Head Professor of Physiology-Pharmacology*, 1953
B.S., D.V.M., Washington State; M.Sc., Ph.D., Ohio State.

CLARK, EDWARD M.—*Associate Professor of Botany*, 1956, 1962
B.S., M.S., Ph.D., Minnesota.

° Temporary.
°° On leave.

CLARK, ROY GARLAND ..... *Instructor in Economics and Business Administration*, 1962
B.S., Mississippi Southern College; M.S., University of Southern Mississippi.

CLINGEMPEEL, WILLIAM D. ..... *Assistant Professor of Military Science*, 1960
B.S., Civil Engr., Virginia Military Institute; Captain, USA.

COBB, CHARLES N. ..... *Professor of Industrial Management (P.E.)*, 1930, 1961
B.S., Clemson; B.I.E., M.S., Auburn University.

COLE, ROGER W. ..... *Instructor in English*, 1962
B.A., M.A.T., University of Florida.

COLLINS, BASIL K. ..... *Associate Professor of Engineering Graphics (P.E.)*, 1936, 1955
B.S., B.M.E., M.S., Auburn University.

CONNALLY, JOSEPH ..... *Assistant Football Coach*, 1952
B.S., Georgia.

CONNER, DAVID ..... *Instructor in Electrical Engineering*, 1961
B.E.E., Auburn University.

*COOK, CAMILLE W. ..... *Instructor in Economics and Business Administration*, 1948
A.B., LL.B., Alabama.

COOK, HOWARD ..... *Assistant Professor of Mathematics*, 1961, 1962
B.S., Clemson Agricultural College; Ph.D., Texas.

COOK, J. SYDNEY, JR. ..... *Assistant Professor of Economics and Business Administration*, 1947, 1948
B.S., Auburn University; LL.B., Alabama; LL.M., New York University.

*COOLEY, IRWIN D. ..... *Assistant Professor of Mechanical Engineering*, 1962
B.S.C.E., Duke University; M.S.E., University of Florida.

COOPER, ARTHUR WIGGINS ..... *Research Lecturer, Agricultural Engineering (P.E.)*, 1939, 1957
B.S., M.S., Auburn University; Ph.D., Michigan State.

COPPEDGE, WILLIAM H. ..... *Associate Professor of Industrial Management*, 1928, 1944
B.S., Oklahoma A. & M.; M.S., Auburn University.

COSS, ARTHUR FULTON ..... *Head Professor of Elementary Education*, 1962
B.E., Northern Illinois University; M.A., Northwestern University; Ed.D., Indiana.

COX, JULIUS GRADY ..... *Head Professor, Industrial Management*, 1957, 1963
B.M.E., M.S., Auburn University; Ph.D., Purdue University.

CRAFTS, ARTHUR G. ..... *Assistant Professor of Physics*, 1944, 1955
A.B., Georgia; M.S., Cornell.

**CRAWFORD, RICHARD P. ..... *Assistant Professor of Bacteriology*, 1956, 1960
D.V.M., Texas A. & M.; M.S., Auburn University.

CREWS, ROBERT T. ..... *Instructor in Laboratory Technology*, 1959
B.S., Auburn University.

CURL, ELROY ARVEL ..... *Associate Professor of Plant Pathology*, 1954, 1958
B.S., Louisiana Polytechnic Institute; M.S., Arkansas; Ph.D., Illinois.

CURRENT-GARCIA, EUGENE ..... *Professor of English*, 1947, 1952
B.A., M.A., Tulane; A.M., Ph.D., Harvard.

DACRES, WILLIAM G. ..... *Professor of Physiology-Pharmacology and Bacteriology and Animal Disease Research*, 1956, 1962
A.B., M.S., Tennessee; Ph.D., Rice Institute.

DALTON, W. THEO ..... *Professor of Education*, 1951, 1962
B.S., Alabama; M.Ed., Duke; Ph.D., George Peabody College for Teachers.

DANNER, MAURICE J. ..... *Professor of Agricultural Economics*, 1943, 1957
B.S., Texas Tech; M.S., Tennessee.

DARDEN, PAUL ALBERT ..... *Assistant Professor of Building Technology*, 1958
B.Arch., Auburn University.

DAVIS, DONALD E. ..... *Professor of Botany*, 1947, 1955
B.Ed., Ped.D., Eastern Illinois University; M.S., Ph.D., Ohio State.

DAVIS, FRANK B. ..... *Head Professor of Speech*, 1948, 1956
A.B., Hendrix; M.A., Iowa; Ph.D., Louisiana State.

*DAVIS, KATHERINE W. ..... *Instructor in Foreign Languages*, 1962
A.B., Auburn University.

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* Temporary.
** On leave.

DAVIS, NORMAN DUANE — *Associate Professor of Botany*, 1958, 1961
B.S., Georgia; M.S., Ph.D., Ohio State.

DAVIS, W. L. — *Professor, Secondary Education, Coordinator of Curriculum and Instruction, and Coordinator of International Paper Company Foundation Program in Secondary Education*, 1951, 1958
B.S., Middle Tennessee Teachers; M.A., Peabody College for Teachers; Ed.D., Columbia.

DEBRUNNER, L. EARL — *Assistant Professor of Forestry*, 1961
B.S., University of Cincinnati; M.F., Yale.

DEAN, H. SHELBY — *Assistant Professor of Building Technology*, 1954, 1956
B.Arch., Auburn University.

DELONEY, JOHN E. — *Professor of Agricultural Education and Head of Learning Resources Center*, 1950, 1962
B.S., M.S., Auburn University; Ed.D., Teachers College, Columbia.

DENDY, EMMA S. — *Catalog Librarian and Instructor*, 1960
A.B., Flora MacDonald College; B.S.L.S., Peabody College for Teachers; M.S.L.S., University of North Carolina.

DENDY, JOHN S. — *Professor of Zoology and Entomology*, 1947, 1957
B.S., Presbyterian; M.A., North Carolina; Ph.D., Michigan.

DEVALL, WILBUR B. — *Head Professor of Forestry*, 1946, 1951
B.S., Syracuse; M.S., Florida.

DIAMOND, DOUGLAS L. — *Assistant Professor of Pathology-Parasitology*, 1960, 1961
D.V.M., M.S., Ontario Veterinary College.

DINIUS, ROBERT H. — *Assistant Professor of Chemistry*, 1961
B.S., Illinois Wesleyan; M.S., Missouri; Ph.D., Florida State.

DIXON, EDMOND D. — *Instructor in Mathematics*, 1958, 1962
B.S., Memphis State; M.S., Auburn University.

DIXON, JOE BORIS — *Associate Professor of Soils*, 1959, 1962
B.S., M.S., Kentucky; Ph.D., Wisconsin.

DJORDJEVIC, BRANIMIR D. — *Professor of Aerospace Engineering*, 1959
Cand. Ing., Dipl. Ing., University of Belgrade.

*DONNALLY, BAILEY — *Visiting Assistant Professor of Physics*, 1962
B.S., M.S., Auburn University; Ph.D., Minnesota. (Resigned effective August 31, 1962.)

DONNELLY, EDWARD DANIEL — *Professor of Agronomy*, 1951, 1959
B.S., M.S., Auburn University; Ph.D., Cornell.

DOOLEY, VINCENT J. — *Assistant Football Coach*, 1956
B.S., Auburn University.

DORMAN, COY — *Instructor in Economics and Business Administration*, 1959
A.B., East Carolina College; M.S., Tennessee.

*DORNE', MELBA — *Instructor in Speech*, 1957
B.S., Western Kentucky State; M.Ed., Auburn University.

DORNE', WILLIAM P. — *Assistant Professor of Education*, 1950, 1958
B.S., Rutgers; M.A., Columbia; Ph.D., Florida.

DOUTY, HELEN IRENE — *Associate Professor in Home Economics*, 1962
B.S., M.S., Cornell; Ph.D., Florida State University.

DRAGOIN, ANTHONY — *Assistant Professor of Health, Physical Education, and Recreation*, 1951, 1955
B.S., M.S., Auburn University.

DRAKE, ALBERT E. — *Associate Professor of Botany*, 1959
B.S., M.S., Kentucky; Ph.D., Illinois.

DUMAS, WILLIAM T., JR. — *Associate Professor of Agricultural Engineering (P.E.)*, 1946, 1955
B.S., M.S., Auburn University.

DUSI, JULIAN L. — *Associate Professor of Zoology-Entomology*, 1949, 1953
B.S., M.S., Ph.D., Ohio State.

EAVES, JOEL H. — *Basketball Coach and Assistant Football Coach*, 1949
B.S., Auburn University.

EDEN, WILLIAM G. — *Professor of Zoology and Entomology*, 1940, 1953
B.S., M.S., Auburn University; Ph.D., Illinois.

* Temporary.

EDGAR, S. ALLEN—*Professor of Poultry Science*, 1947, 1950
A.B., Sterling; M.S., Kansas State; Ph.D., Wisconsin.

ELIZONDO, YNDALECIO ANDRES—*Associate Professor of Mechanical Engineering* 1927, 1943
B.S.C.E., B.S.M.E., M.S., Auburn University.

ELLIOTT, CECIL D.—*Professor of Architecture*, 1962
B.Arch., University of Oklahoma; M.Arch., Harvard.

ELLIOTT, GERALD F.—*Assistant Football Coach*, 1957, 1962
B.S., Auburn University.

ELLIS, THEO H.—*Acting Director of Computer Center*, 1960, 1962
A.B., B.S.A., M.S.H., Ph.D., University of Florida.

ELLISOR, MILDRED R.—*Associate Professor of Education*, 1958, 1961
A.B., Huntingdon College; M.A., Ed.D., Columbia.

°ENSMINGER, ISABEL S.—*Assistant Professor of Education*, 1961
B.S.H.E., West Virginia University; M.S.Ec., Minnesota.

ENSMINGER, LEONARD E.—*Professor of Agronomy and Soils*, 1944, 1953
B.S., Missouri; Ph.D., Illinois.

ERWIN, CLYDE L.—*Assistant Professor of Economics and Business Administration*, 1960
B.B.A., M.B.A., University of Mississippi.

EUBANK, N. H.—*Instructor of Pathology and Parasitology*, 1962
B.S., University of Tennessee; D.V.M., Auburn University.

EVANS, DORIS—*Instructor in Economics and Business Administration*, 1959
B.S., Florence State College; M.A., Peabody.

EVANS, ROBERT K.—*Associate Professor of Health, Physical Education, and Recreation; Director of Intramural Sports for Men*, 1942
B.S., M.S., North Carolina State.

FAULK, RUTH T.—*Assistant Professor of English*, 1947, 1955
A.B., Huntingdon; M.S., Auburn University.

°FAUST, RUBY JO—*Instructor in English*, 1960, 1962
B.S., Auburn University.

FEASTER, WILLIAM M.—*Assistant Professor of Electrical Engineering (P.E.)*, 1956, 1959
B.E.E., M.E.E., Auburn University.

°FELDMAN, ROGER G.—*Instructor of Bacteriology*, 1962
D.V.M., Iowa State University.

°°FINDLEY, MARSHALL EWING—*Associate Research Professor of Chemical Engineering*, 1958
B.S., Texas A. & M.; M.S., Institute of Paper Chemistry; Ph.D., Florida.

FISHER, HOMER S.—*Associate Professor of Ornamental Horticulture*, 1935, 1948
B.S., Auburn University; B.L.A., Massachusetts.

FITZGERALD, THEODORE C.—*Head Professor of Anatomy and Histology*, 1940, 1948
D.V.M., M.S., Ohio State.

FITZPATRICK, BEN, JR.—*Associate Professor of Mathematics*, 1952, 1961
B.S., Auburn University; M.A., Ph.D., Texas.

FITZPATRICK, MARY PRESTON—*Associate Professor of Education*, 1962
B.S., Middle Tennessee State College; M.A., Ed.D.S., George Peabody College.

FITZPATRICK, PHILLIP—*Associate Professor of Mathematics*, 1962
B.S., M.S., Ph.D., University of Oklahoma.

FLUKER, BILLY JOE—*Associate Professor of Mechanical Engineering (P.E.)*, 1960
B.S.E.E., M.S.M.E., Texas A. & M.

FOLEY, CARL O.—*Assistant Professor of Naval Science*, 1961
B.S.C.E., University of Pennsylvania; Lieutenant, USNR.

FOURIER, ARTHUR E.—*Head Professor of Health, Physical Education, and Recreation*, 1961
B.S., Illinois; M.A., Ph.D., George Peabody College.

°FOURIER, RUTH G.—*Acting Humanities Librarian and Instructor (Library)*, 1962
A.B., Vanderbilt; M.A., Univ. of South Carolina; Ph.D., Vanderbilt.

FOWLER, HOWARD GILL—*Assistant Professor of Industrial Management*, 1957
B.S., Tennessee Polytechnic Institute; M.Ed., University of Florida.

° Temporary.
°° On leave.

FRADY, CHARLES S. — *Instructor in Mathematics*, 1959, 1962
B.S., Western Carolina College; M.S., Auburn University.

FRANCE, MORGAN M. — *Assistant Professor of Naval Science*, 1962
B.S., College of the Holy Cross; Lieutenant, USN.

FRANCIS, WILLIAM HUGH — *Head Professor of Engineering Graphics (P.E.)*, 1959
B.S., M.S., Auburn University.

FRANKLIN, CHARLES B., JR. — *Assistant Professor of Economics and Business Administration*, 1960
B.S.B.A., University of Florida; M.S., Florida State.

*FRENCH, FRANCIS C. — *Instructor in Sociology*, 1960
B.A., M.S., Louisiana State University.

FRENCH, JOHN D. — *Assistant Professor of Physics*, 1958
B.S., M.S., Ph.D., Louisiana State University.

FRISBY, CARL — *Assistant Professor of Economics and Business Administration*, 1953, 1957
B.S., M.S., Auburn University.

FUNDERBURK, HENRY HANLEY, JR. — *Assistant Professor of Botany*, 1961
B.S., M.S., Auburn University; Ph.D., Louisiana State University.

FURUTA, TOKUJI — *Professor of Ornamental Horticulture*, 1951, 1962
B.S., M.S., Ph.D., Ohio State.

GATES, DAVID G. — *Associate Professor of Industrial Management*, 1962
B.S.I.E., M.S.I.E., University of Arkansas; Ph.D., Oklahoma State University.

GEARY, JACK C. — *Associate Professor of Large and Small Animal Surgery and Medicine*, 1962
D.V.M., Ohio State.

GIBBONS, WALTER J. — *Professor of Large Animal Surgery and Medicine, and Infectious Diseases*, 1947, 1955
D.V.M., M.S., Cornell.

GIBSON, ROBERT — *Instructor of Art*, 1960, 1962
B.F.A., Industrial Design; B.F.A., Art Education, Carnegie Tech.

GILL, WILLIAM ROBERT — *Research Lecturer, Agricultural Engineering*, 1957
B.S., Pennsylvania State; M.S., University of Hawaii; Ph.D., Cornell.

*GILLESPIE, JUDITH — *Instructor in Speech*, 1962
B.S., Auburn; M.S., Vanderbilt.

GLYDE, EDGAR C. — *Professor of Music*, 1946, 1957
F.T.C.L., L.Mus.T.C.L., L.R.A.M., L.T.C.L. (London, England).

GOOD, HENRY G. — *Professor of Zoology and Entomology*, 1924, 1946
B.S., California; M.S., Ph.D., Cornell.

GOODMAN, JOHN G. — *Associate Professor of Poultry Science*, 1939, 1946
B.S., M.S., Auburn University.

GOOLSBY, HYRON C. — *Assistant Professor of Industrial Laboratories*, 1953, 1958
B.S., M.Ed., Auburn University.

GOSLIN, WILLIAM E. — *Assistant Professor of Botany*, 1959
B.S., M.S., Ph.D., Ohio State.

GOSSER, LEO G. — *Professor of English*, 1927, 1933
B.S., Kirksville State Teachers; Ph.D., Chicago.

GRAF, EDWARD RAYMOND — *Associate Professor of Electrical Engineering*, 1957, 1963
B.E.E., M.E.E., Auburn University; Ph.D., Institut fur Hochstfrequenztechnik, Stuttgart, Germany.

**GRAY, JOHN W. — *Instructor in Speech*, 1959
B.A., Ouachita Baptist College; M.A., Arkansas.

GRAY, ROY COOPER, JR. — *Instructor in Animal Science*, 1957
B.S., M.S., Kentucky.

GREEN, JOHN CHASE — *Assistant Professor of Speech*, 1947, 1950
B.A., Yale; M.S., Southern California.

GRITZ, IRVIN B. — *Associate Professor of Economics and Business Administration*, 1931, 1946
B.S., M.S., Oklahoma A. & M.

GROTH, AARON H., JR. — *Associate Professor of Pathology and Parasitology*, 1957, 1959
B.S., D.V.M., Auburn University; M.S., Iowa State.

* Temporary.
** On leave.

GUNTER, PETE ADDISON—*Assistant Professor of Philosophy*, 1962
B.A., Texas; B.A., Cambridge University; Ph.D., Yale.

GUY, CHARLES E.—*Instructor in Economics and Business Administration*, 1961
A.B., Wofford College; M.S.C., Alabama.

GUYTON, FAYE E.—*Professor of Zoology and Entomology*, 1921, 1938
B.S., M.S., Ohio State.

HAINES, PAUL—*Professor of English*, 1947, 1952
B.S., Lafayette; M.A., Ohio Wesleyan; Ph.D., New York.

HALE, DENNIS P.—*Assistant Professor of Economics and Business Administration*, 1957, 1959
B.S., Middle Tennessee State; M.A., Peabody.

HALE, FRANCES W.—*Assistant Professor of Economics and Business Administration*, 1956, 1959
B.S., Troy State College; M.A., Peabody.

HALL, DANIEL DILLON—*Assistant Professor of Military Science*, 1962
B.S., Textile Engr., Auburn University; B.S.C.E., Missouri School of Mines; Captain, USA.

HAMILTON, JOHN WARD—*Associate Professor of Foreign Languages*, 1956, 1960
B.A., M.A., Florida; Doc en fil y let., Salamanca (Spain).

HAMNER, BENNETT B.—*Professor of Aerospace Engineering (P.E.)*, 1960
B.S.C.E., M.S.A.E., Texas A. & M.

HANNA, MARK—*Associate Professor of Economics and Business Administration*, 1958, 1962
A.B., Birmingham-Southern College.

HANSEN, LESTER T.—*Assistant Professor of Air Science*, 1961
B.S., M.S., Utah State; Captain, USAF.

*HARGETT, MARY ANNE—*Instructor in Music*, 1962
B.M., Auburn University.

HARGREAVES, GEORGE W.—*Professor of Pharmaceutical Chemistry*, 1926, 1950
B.S., M.S., Ph.C., Nebraska.

HARLAN, RICHARD S.—*Assistant Professor of Physics*, 1959
B.S., U.S. Naval Academy.

HARRIS, HUBERT—*Associate Professor of Horticulture*, 1936, 1948
B.S., M.S., Auburn University.

HARTMAN, MAURICE A.—*Associate Professor of Economics and Business Administration*, 1956
B.S., High Point College; M.S., North Carolina; M.B.A., Texas; C.P.A. (North Carolina); C.L.U., American College of Life Underwriters.

HARTWIG, CHESTER W.—*Professor of Sociology*, 1951, 1961
B.S., M.A., Ph.D., Wisconsin.

*HAWKINS, JOHNNIE RUTH—*Instructor in Mathematics*, 1960, 1962
B.S., Jacksonville State College; M.S., Auburn University.

HAYLEY, LEE R.—*Assistant Football Coach*, 1963
B.S., M.S., Auburn University.

HAYNES, LUTHER J.—*Head Professor of Industrial Laboratories*, 1945, 1962
B.S., M.S., Auburn University; Ph.D., Bradley University.

HAYNESWORTH, EMILIE VIRGINIA—*Associate Professor of Mathematics*, 1960
A.B., Coker College; M.A., Columbia University; Ph.D., North Carolina.

HAYS, DEAN S.—*Assistant Professor of Zoology-Entomology*, 1956, 1962
B.A., Maryville College; M.S., Auburn.

HAYS, KIRBY LEE—*Associate Professor of Zoology-Entomology*, 1957, 1960
B.S., M.S., Auburn University; Ph.D., Michigan.

HAZARD, GILBERT C.—*Assistant Professor of Naval Science*, 1962
B.S., Villanova University; Major, U.S. Marine Corps.

HEAD, WILLIAM FRANCIS, JR.—*Associate Research Professor of Pharmaceutical Chemistry*, 1960, 1961
B.S., Auburn University; M.S., Ph.D., Florida.

HEARN, RONALD B.—*Instructor in English*, 1960, 1962
B.A., Baylor; M.A., Emory.

HEATH, MCKENZIE—*Professor of Small Animal Surgery and Medicine*, 1952, 1955
D.V.M., Auburn University.

* Temporary.

HELMKE, HENRY C. — *Instructor in Foreign Languages*, 1959, 1960
B.A., M.A., Duke.

HENDERSON, BARBARA — *Instructor in Elementary Education*, 1960, 1962
B.S., West Georgia; M.Ed., Auburn University. (Resigned effective August 31, 1962.)

HENDRICK, JAMES G. — *Assistant Professor of Agricultural Engineering*, 1962
B.S., M.S., Auburn University.

HENDRICKS, THOMAS EARLE — *Assistant Professor of Military Science*, 1962
B.S., Horticulture, Clemson College; Captain, USA.

HENRY, JOHN FREDERICK — *Assistant Professor of Industrial Management*, 1957
B.I.M., Auburn University; M.S.I.M., Georgia Tech.

HERNDON, FRANK M. — *Professor in Education*, 1962
A.B., Bowling Green College of Commerce; M.B.A., Mississippi; Ed.D., Northwestern.

HERRING, HAL W. — *Assistant Football Coach*, 1953
B.S., M.S., Auburn University.

HERRON, ARTHUR M. — *Associate Professor of Textile Technology*, 1961
B.S.T.E., M.S.T.E., Georgia Tech.

HILL, A. J. — *Associate Professor of Economics and Business Administration*, 1948, 1952
B.S., Auburn University; M.B.A., Northwestern.

HILL, PAUL D. — *Research Assistant Professor of Mathematics*, 1956, 1962
B.S., M.S., Ph.D., Auburn University.

HILLIARD, ROY — *Assistant Professor of Air Science*, 1959
B.S., Florida; Captain, USAF.

HILTBOLD, ARTHUR EDWARD — *Associate Professor of Soils*, 1955, 1959
B.S., Cornell; M.S., Iowa State; Ph.D., Cornell.

HINES, WILLIAM M. — *Associate Professor of Naval Science*, 1960
B.S.Sc., Middle Tennessee State College; B.S.Ed., Auburn University; Commander, USN.

HINTON, WILBUR — *Professor, Band Director, Music*, 1956, 1959
B.M., M.A., Ed.D., Alabama.

HIRTH, LEO J. — *Associate Professor of Chemical Engineering*, 1962
B.S., College of City of New York; M.S., Ph.D., University of Texas.

HOCKING, GEORGE M. — *Professor of Pharmacognosy*, 1951
B.S., Washington; M.S., Ph.D., Florida.

HODGKINS, EARL J. — *Professor of Forestry*, 1952, 1957
B.S., Michigan State; M.S., California; Ph.D., Michigan State.

HOEPFNER, THEODORE C. — *Professor of English*, 1941, 1962
B.S., Memphis State; M.A., Vanderbilt.

HOERLEIN, BENJAMIN F. — *Head Professor of Small Animal Surgery and Medicine*, 1947, 1958
D.V.M., Colorado A. & M.; Ph.D., Cornell.

HOFF, EDWIN J. — *Associate Professor of Pathology and Parasitology*, 1962
D.V.M., Cornell.

HOFFER, RICHARD E. — *Instructor in Small Animal Surgery and Medicine*, 1960
D.V.M., New York State Veterinary College.

HOLLAWAY, OTTO — *Professor of Education*, 1945, 1953
B.S., M.S., Auburn University; Ed.D., Teachers College, Columbia.

HOLLOWAY, CLARKE L. — *Instructor in Anatomy and Histology*, 1960
D.V.M., Auburn University.

HOLMES, CHARLES H. — *Associate Professor of Electrical Engineering*, 1957, 1962
B.E.E., Auburn University; M.E.E., Brooklyn Polytechnic Institute; Ph.D., Stanford.

HONNELL, MARTIAL ALFRED — *Professor of Electrical Engineering*, 1958
B.S.E.E., M.S.E.E., Georgia Tech.

HOOD, JOSEPH T. — *Professor of Agronomy and Soils*, 1949, 1959
B.S., Georgia; M.S., Purdue; Ph.D., Cornell.

HORNE, ROBERT D. — *Assistant Professor of Small Animal Surgery and Medicine*, 1959, 1961
D.V.M., M.S., Auburn University.

HORTON, DAN H. — *Assistant Professor of Military Science*, 1962
B.S., Clemson College; M.S., University of Tennessee; Major, USA.

HOVELAND, CARL S. — *Associate Professor of Agronomy and Soils*, 1959
B.S., M.S., Wisconsin; Ph.D., Florida.

°HOWELL, LEWIS — *Instructor in Economics and Business Administration*, 1961
B.S., M.S., University of Southern Miss.; B.D., Southwestern Baptist Theological Seminary.

HOWES, JAMES R. — *Assistant Professor of Poultry Science*, 1960
B.S.C., University, London; N.D.A., University, Edinburgh; M.S.C., McGill University, Montreal.

HSU, CHENG-TEH — *Professor of Chemical Engineering*, 1953, 1962
B.S., University of Nanking; M.S., Ph.D., University of Wisconsin.

HUDSON, FRED M. — *Professor of Civil Engineering (P.E.)*, 1947, 1961
B.S.C.E., Purdue; M.S., Princeton.

HUDSON, SARA CARRUTH — *Assistant Professor of English*, 1952, 1958
A.B., North Carolina; M.A., Ph.D., Chicago.

HUESTIS, JOHN L. — *Assistant Professor of Military Science*, 1959
B.S., Minnesota; Major, USA.

HUGHES, GORDON — *Professor of Physics*, 1933, 1946
B.A., Oberlin; M.A., Ph.D., Illinois.

HULL, PATRICIA — *Instructor in Physics*, 1960, 1962
B.S., Auburn University. (Resigned effective June 15, 1962.)

HUTSELL, WILBUR HALL — *Track Coach and Professor, Athletics*, 1921
A.B., Missouri.

IKENBERRY, ERNEST — *Research Professor of Mathematics*, 1950, 1956
A.B., Ottaway; M.A., Kansas; Ph.D., Louisiana.

IKENBERRY, JANICE T. — *Assistant Professor of Foreign Languages*, 1945
A.B., Randolph-Macon Woman's College; M.A., Alabama; Diplomas from Univ. of Poitiers, Univ. of Paris, and University of Geneva.

INGALLS, ROBERT D. — *Assistant Professor of Mechanical Engineering*, 1921, 1955
B.C.E., Cornell; M.S., Auburn University.

INGLE, REBECCA B. — *Instructor in Zoology-Entomology*, 1960
B.S., Florence State College.

INGRAM, FORNEY H. — *Assistant Professor of Engineering Graphics (P.E.)*, 1927, 1957
B.S.C.E., M.C.E., Auburn University.

°INGRAM, WILLIAM THOMAS — *Instructor in Mathematics*, 1961
B.A., Bethel College; M.S., Louisiana State University.

IVEY, OLIVER T. — *Associate Professor of History and Political Science*, 1928, 1946
B.S., M.S., Auburn; M.A., Chicago.

JACKSON, BYRON K. — *Assistant Professor of English*, 1960
B.S., Butler University; M.A., Miami.

JACKSON, ELINOR — *Instructor in Health, Physical Education and Recreation*, 1958
B.S., Georgia State College for Women; M.S., Florida State.

°JACKSON, MARGARET ELLEN — *Instructor in Chemistry*, 1956, 1962
B.S., Muskingum College.

JAMES, CHARLES W. — *Assistant Professor in Anatomy and Histology*, 1959, 1960
D.V.M., Auburn University.

JEFF, JOHN L. — *Assistant Professor of Air Science*, 1961
B.A., Birmingham-Southern; Major, United States Air Force.

JEMIAN, WARTAN A. — *Associate Professor of Mechanical Engineering*, 1962
B.S.Ch., Univ. of Maryland; M.S., Ph.D., Metallurgical Engineering, Renssalaer Polytechnic Institute.

JOHNSON, DAVID LEE — *Instructor in Economics and Business Administration*, 1961
B.S., M.B.A., Louisiana State University.

JOHNSON, DONALD R. — *Assistant Professor of Military Science*, 1959
B.S.C.E., Michigan; Major, USA.

JOHNSON, EVERT W. — *Associate Professor of Forestry*, 1950, 1957
B.S., New Hampshire; M.F., Yale; Ph.D., Syracuse.

JOHNSON, JACK L. — *Instructor of Engineering Graphics*, 1959
B.I.M., Auburn University.

JOHNSON, LEWIS WARREN — *Associate Professor of Poultry Science*, 1948, 1961
A.B., Cornell; M.S., Auburn University; Ph.D., A. & M. College of Texas.

° Temporary.

JOHNSON, RONALD E. — *Assistant Professor of Psychology*, 1960
B.A., Ph.D., Ohio State.

JOHNSON, SIDNEY W. — *Associate Professor of History*, 1925, 1941
B.S., M.S., Auburn University.

JOHNSON, WILEY C., JR. — *Associate Professor of Agronomy and Soils*, 1957
B.S., Wake Forest; B.S., M.S., North Carolina State; Ph.D., Cornell.

JONES, EDWARD OSCAR, JR. — *Professor of Mechanical Engineering (P.E.)*, 1946, 1961
B.M.E., B.E.E., Auburn University; M.S., University of Illinois.

JONES, HANIEL — *Instructor in Engineering Graphics*, 1958
B.A., Millsaps College; B.D., Duke.

JONES, MADISON P., JR. — *Assistant Professor of English*, 1956
A.B., Vanderbilt; M.A., Florida.

JONES, SAM T. — *Associate Professor of Horticulture*, 1950, 1954
B.S., M.S., Auburn University; Ph.D., Louisiana State.

JORDAN, RALPH — *Head Football Coach and Assistant Director of Athletics*, 1932, 1951
B.S., Auburn University.

JUSTICE, ERNEST — *Assistant Professor of Education*, 1959
B.M.E., Kansas State Teachers College; M.S., Ph.D., Wisconsin.

°JUSTICE, MARY ELIZABETH — *Instructor of Education*, 1960
B.M.E., Kansas State Teachers College.

KAMINSKY, WALLACE B. — *Assistant Professor of English*, 1955, 1958
B.A., New York; M.F.A., Iowa State.

KEHOE, JOHN L., JR. — *Instructor in English*, 1961
A.B., Fordham; M.A., Columbia.

KELLEY, CHARLES MANFORD — *Head Professor of Architecture*, 1946, 1957
B.Arch., Auburn University; M.Arch., Harvard.

KELLEY, ROGER LEE — *Assistant Professor of Psychology*, 1960
A.B., Chicago.

KENDRICK, JACK E. — *Associate Professor of History*, 1939, 1946
A.B., North Carolina; M.A., Emory; Ph.D., North Carolina.

°°KERN, EDWARD E., JR. — *Associate Professor of Agricultural Economics*, 1955
B.S., M.S., Louisiana State University.

°KERNS, H. VICTOR — *Instructor in Education*, 1959, 1961
B.S., Auburn University; M.A., Teachers College, Columbia; Ed.D., Auburn University.

°KETTUNEN, MARIETTA — *Associate Professor of Art*, 1954, 1962
B.A.E., Art Institute of Chicago; Studied Parsons, New York Art Students League.

KINARD, BILLY R. — *Instructor in Health, Physical Education and Recreation*, 1961
B.S., University of Mississippi.

KINCEY, TRULY ELIZABETH — *Associate Professor of Economics and Business Administration*, 1957, 1960
A.B., Alabama College; M.A., Tulane.

KINNAIRD, RICHARD — *Instructor in Art*, 1960
B.F.A., Carlton College; M.F.A., University of Illinois.

KIRBY, ANN D. — *Instructor in Speech*, 1960
A.B., Valdosta State College; M.F.A., Georgia.

KLEPINGER, WALTER J. — *Assistant Professor of Engineering Graphics*, 1934, 1956
B.M.E., Ohio State University.

KLONTZ, HAROLD E. — *Professor of Economics and Business Administration*, 1946, 1950
A.B., Berea; Ph.D., North Carolina.

KNIGHT, WILLIAM C. — *Professor of Textile Technology*, 1946, 1961
B.T.C., Auburn University; M.S.T.E., Georgia Tech.

KNOWLES, RALPH L. — *Assistant Professor of Architecture*, 1959
B.Arch., North Carolina State; M.Arch., M.I.T.

KNOWLES, ROBERT L. — *Associate Professor of Dramatic Arts*, 1951, 1962
B.A., Stetson; M.A., Florida.

KOSOLAPOFF, GENNADY M. — *Research Professor of Chemistry*, 1948, 1953
B.S., Ch.E., Cooper Union; M.S., Sc.D., Michigan State.

° Temporary.
°° On leave.

KRIBS, ANNA E. — *Bibliographer and Instructor (Library)*, 1961
A.B., Louisiana Polytechnic Institute; M.S.L.S., Louisiana State University.

LACERVA, PATRICIA — *Instructor in English*, 1960, 1962
B.A., Southeastern Louisiana College; M.A., Auburn University.

LAMAR, MARY GEORGE — *Assistant Professor of Economics and Business Administration*, 1933, 1955
B.S., Auburn University; M.A., N.Y.

LAND, JAMES EDWARD — *Professor of Chemistry*, 1938, 1955
B.S., Clemson; M.S., Tulane; Ph.D., North Carolina.

LAND, JEANNETTA T. — *Professor of Health, Physical Education, and Recreation*, 1941, 1943
B.S., Alabama; M.A., Teachers College, Columbia.

LANDERS, KENNETH E. — *Instructor in Botany*, 1960, 1961
B.S., Florence State.

LANHAM, BEN T., JR. — *Head Professor of Agricultural Economics*, 1939, 1956
B.S., Clemson; M.S., Tennessee; Ph.D., Michigan State University.

LAPP, VERNON W. — *Professor of Health, Physical Education, and Recreation*, 1940, 1944
B.S., M.A., Ph.D., Iowa.

LARSEN, HARRY S. — *Assistant Professor of Forestry*, 1959
B.S., Rutgers; M.S., Michigan State.

LARSON, ROBERT NELSON — *Associate Professor of History and Political Science*, 1961
A.B., Columbia; A.M., Tufts University; A.M., Ph.D., Boston University.

LATIMER, PAUL — *Associate Professor of Physics*, 1962
B.S., Northwestern University; M.S., Ph.D., Illinois.

LAWLER, JOYCE — *Assistant Professor of Health, Physical Education, and Recreation*, 1955, 1958
A.B., Bessie Tift College; M.A., Peabody.

LAWRENCE, JOHN M. — *Associate Professor of Zoology-Entomology*, 1946, 1956
B.S., M.A., Auburn University; Ph.D., Iowa State.

LAWSON, SAMMY — *Instructor in English*, 1959, 1961
B.A., Huntingdon; M.A., Auburn University.

LAWSON, STANTON C. D. — *Associate Professor of Mechanical Engineering*, 1958
B.S.Sc., University of Toronto; M.S., University of Michigan.

LAYFIELD, CLAUDE B. — *Associate Professor of Industrial Management (P.E.)*, 1947, 1958
B.A.A., B.I.M., Auburn University; M.S., Georgia Tech.

LAYFIELD, MARY — *Assistant Professor of Home Economics*, 1953, 1957
B.S., M.S., Ed.D., Auburn University.

LAYMAN, EARL DRAIS — *Associate Professor of Architecture*, 1957
B.S., B.Arch., Oregon University; Certificate, Fontainebleau School of Fine Arts, France.

LEFFARD, WARREN L. — *Assistant Professor of Industrial Laboratories*, 1956, 1959
B.S., M.Ed., Auburn University.

LEHMANN, RUTH — *Instructor in English*, 1955, 1962
B.A., LaGrange College; M.A., Auburn University.

*LIGHT, MARGARET PANSY — *Instructor in Mathematics*, 1953, 1955
B.S., Mississippi Southern; M.A., M.S., Auburn University.

LITTLE, ALTON S. — *Associate Professor of Engineering Graphics (P.E.)*, 1947, 1955
B.C.E., Auburn University; M.S.C.E., Georgia Tech.

LITTLETON, ROBERT EDWARD — *Instructor in Electrical Engineering*, 1960
B.S.Ch., Berry College; B.S.Ch.Engr., M.S.Ch.Engr., Auburn University.

LITTLETON, TAYLOR D. — *Assistant Professor of English*, 1957, 1959
B.S., M.A., Ph.D., Florida.

LIVERMAN, JOHN HUBERT — *Head Professor of Music*, 1945, 1954
B.S., M.A., Columbia.

LORENDO, EUGENE — *Assistant Football Coach*, 1951
B.S., Georgia.

*LORENDO, JANE C. — *Instructor in Home Economics*, 1956, 1958
B.S., University of Minnesota; M.S., Auburn University.

* Temporary.

LOUCK, JAMES D. — *Associate Research Professor of Physics*, 1960
B.S., Auburn University; M.S., Ph.D., Ohio State University.

**LOWRY, JAMES L. — *Assistant Professor of Electrical Engineering*, 1955, 1957
B.E.E., M.E.E., Auburn University.

LURIE, GAYLE W. — *Instructor in Health, Physical Education and Recreation*, 1961
B.S., Huntingdon College.

LYLE, JAMES A. — *Head Professor of Botany and Plant Pathology*, 1947, 1954
B.S., Kentucky; M.S., North Carolina State; Ph.D., Minnesota.

LYNN, WILLIAM J. — *Instructor in Health, Physical Education, and Recreation*, 1951
B.S., Auburn University.

LYON, THURMAN JUDSON — *Instructor in Electrical Engineering*, 1961, 1962
B.S.E.E., Auburn University.

°MAC GREGOR, MARGARET — *Assistant Professor of Music*, 1955, 1956
B.M., M.M., Michigan.

**MACON, NATHANIEL — *Professor of Mathematics and Director of Computer Laboratory*, 1951, 1959
A.B., M.A., Ph.D., North Carolina.

°MAJOR, ELIZABETH BASKERVILLE — *Instructor in Mathematics*, 1960
B.S., Auburn University.

MARSHALL, NORTON LITTLE — *Associate Professor of Botany*, 1958, 1961
B.S., Pennsylvania State; M.D., Ph.D., Maryland.

MARTIN, FRED WILLIAM — *Professor of Aerospace Engineering (P.E.)*, 1956
B.S.A.E., M.S., Virginia Polytechnic Institute.

MARTIN, WILLIS C., JR. — *Instructor in Ornamental Horticulture*, 1951, 1958
B.S., Auburn University.

MARTINCIC, ALBERT FRANK — *Assistant Professor of Health, Physical Education, and Recreation*, 1948, 1953
B.S., M.A., State University of Iowa.

MARTY, EDWARD C. — *Professor of Building Technology*, 1939, 1957
B.Arch., M.Arch., Auburn University.

MASSEY, CLAUDE W. — *Instructor in Economics and Business Administration*, 1962
B.B.A., M.B.A., Georgia State College of Business Administration.

MATTOX, PAUL R. — *Instructor in Speech*, 1961
B.A., Los Angeles State College; M.A., State University of Iowa.

MAYER, RONALD W. — *Assistant Professor of Psychology*, 1958
B.A., Ohio Wesleyan; M.A., Ph.D., Ohio State.

MAYNOR, HAL WHARTON, JR. — *Professor of Mechanical Engineering (P.E.)*, 1959
B.S., M.S., D. of Engr., University of Kentucky.

MAYS, JOHN B., JR. — *Assistant Professor of Air Science*, 1959
B.S., Georgia; Lt. Colonel, USAF.

°MAZERES, REGINALD MERLE — *Instructor in Mathematics*, 1960, 1962
B.S., Southwestern Louisiana Institute.

MCCAIN, FRANCIS SAXON — *Professor of Agronomy and Soils*, 1946, 1959
B.S., M.S., Auburn University; Ph.D., Purdue.

MCCANN, FRANKLIN T. — *Professor of English*, 1947, 1953
A.B., Denison; M.A., Harvard; M.A., Ph.D., Columbia.

MCCLUNG, JAMES D. — *Associate Professor of Engineering Graphics*, 1941, 1946
B.S., Ed.M., Oklahoma University.

MCGOWEN, NEIL E. — *Assistant Football Coach*, 1948
B.S., Auburn University.

MCINTYRE, SHERWOOD C. — *Professor of Psychology*, 1948
B.A., B.Sc.Ed., M.A., Ph.D., Ohio State.

MCIVOR, JOHN WILFRED — *Assistant Professor of Art*, 1959, 1962
B.F.A., M.F.A., Illinois.

MCKAY, JOE M. — *Instructor in Electrical Engineering*, 1957
B.S.Ch., Auburn University.

° Temporary.
** On leave.

McKOWN, DELOS BANNING — *Assistant Professor of Philosophy*, 1962
B.A., Alma College; B.D., College of the Bible (Kentucky); M.A., Kentucky; Diploma, University of Geneva, (Switzerland).

McLEOD, FRANCES R. — *Assistant Professor of English*, 1945, 1955
A.B., Huntingdon; M.S., Auburn University.

McMILLAN, MALCOLM COOK — *Research Professor of History and Political Science*, 1948, 1952
A.B., M.A., Alabama; Ph.D., North Carolina.

McMURTRY, THOMAS EDWARD — *Instructor in Industrial Laboratories*, 1959
B.S., M.Ed., Auburn University.

McNORTON, CLAUDE — *Assistant Professor of History and Political Science*, 1946, 1949
A.B., Alabama; M.S., Louisiana State Univ.; M.A., New York University.

MECHAM, JOHN STEPHEN — *Associate Professor of Zoology-Entomology*, 1956, 1961
B.A., Texas; M.S., Florida; Ph.D., Texas.

°MEGIBBEN, CHARLES KIMBROUGH — *Instructor in Mathematics*, 1960, 1962
B.S., Southern Methodist University.

MELIUS, PAUL — *Associate Professor of Chemistry*, 1957
B.S., Bradley; M.S., Chicago; Ph.D., Loyola, Chicago.

°MELZER, DOROTHY GARRETT — *Assistant Professor of English*, 1958
A.M., Ph.B., Chicago.

MELZER, JOHN HENRY — *Professor of Philosophy*, 1958
A.M., Ph.D., Vanderbilt.

METZ, GENE ALAN — *Assistant Professor of Civil Engineering*, 1960
B.S.C.E., M.S.C.E., University of Missouri; Ph.D., Washington University.

METZGER, ABRAM B. — *Assistant Professor of History and Political Science*, 1937, 1947
B.B.A., Chattanooga; M.S., Auburn University.

MILLER, HAMPTON KNOX — *Assistant Professor of Electrical Engineering (P.E.)*, 1938, 1946
B.E.E., Auburn University.

MILLER, WILLIAM R. — *Instructor in Bacteriology*, 1960
D.V.M., Auburn University.

MILLICAN, ALTA LUCILLE — *Assistant Professor of Education*, 1958, 1961
B.S., Jacksonville State; M.A., Alabama; M.S., Florida State; Ed.D., Auburn University.

°°MIN, TONY C. — *Associate Professor of Mechanical Engineering (P.E.)*, 1957
B.S.A.E., Chiao Tung University; M.S.M.E., University of Tennessee.

°MITCHELL, DOROTHY N. — *Instructor of Art*, 1961
B.A., Auburn University.

MITCHELL, ROY D. — *Associate Professor of Engineering Graphics (P.E.)*, 1956, 1961
B.S., M.S., Oklahoma State University.

°MIZE, JIMMY ROY — *Instructor in Economics and Business Administration*, 1960, 1962
B.S., Florence State College.

MONTGOMERY, R. W. — *Head Professor of Agricultural Education*, 1940, 1952
B.S., M.S., Auburn University; Ph.D., Ohio State.

°MOON, WILLIAM HAROLD — *Acting Assistant Professor in Psychology*, 1956, 1962
B.S., Auburn University; Ph.D., Florida State.

MOORE, CLAUDE H. — *Head Professor of Poultry Science*, 1956, 1959
B.S., Auburn University; M.S., Kansas State; Ph.D., Purdue.

MOORE, JOHN R. — *Professor of English*, 1932, 1960
A.B., Tulane; A.M., Ph.D., Harvard.

MOORE, JOSEPH C. — *Assistant Professor of Horticulture*, 1938, 1947
B.S., Auburn University; M.S., Washington University.

°MOORE, MARY VIRGINIA — *Associate Professor in Speech*, 1956, 1962
A.B., Valdosta State College; M.S., Purdue.

MOORE, OMAR C. — *Associate Professor of Chemical Engineering*, 1931, 1953
B.S., M.S., Auburn University.

°°MORGAN, WILLIAM W. — *Assistant Professor of Industrial Management*, 1954
B.B.A., University of Georgia; M.S.I.M., Georgia Tech.

° Temporary.
°° On leave.

*MORRILL, OLIVE L. — *Assistant Professor in Home Economics*, 1959
B.S., Utah State University; M.S., Cornell University.

MORTON, SUE BRAKEBILL — *Assistant Professor in Home Economics*, 1961
B.S., M.S., Ph.D., Texas Woman's University.

MOSS, BEVERLY TURPIN — *Head of Humanities Department and Associate Professor (Library)*, 1962
A.B., University of Missouri; M.A., Ph.D., University of North Carolina; M.S.L.S., University of Southern California.

MOSS, J. HERBERT, JR. — *Assistant Professor of Mathematics*, 1948
A.B., William and Mary; M.S., New York.

*MUELLER, RICHARD EDWIN — *Instructor of Mechanical Engineering*, 1957
B.M.E., Auburn University.

*MYLES, MARY G. — *Instructor in Chemical Engineering*, 1957, 1962
B.S., University of Pittsburgh; M.S., Auburn University.

MYLES, WILLIAM R. — *Associate Professor of Economics and Business Administration*, 1949, 1957
B.S., M.A., Pittsburgh.

NAYLOR, ROBERT ARTHUR — *Assistant Professor of History and Political Science*, 1956, 1957
B.A., M.A., University of Western Ontario; Ph.D., Tulane.

NEAL, JAMES E. — *Head Professor of Bacteriology*, 1951, 1959
B.S., Mississippi State; D.V.M., Auburn University; M.S., Texas A. & M.

NEAL, JESSE HAROLD — *Professor of Agricultural Engineering (P.E.)*, 1939, 1948
B.S., Kansas State; M.S., Minnesota; Ph.D., Missouri.

NEILSON, CLIFFORD CLARKE — *Assistant Professor of Military Science*, 1960
B.S., U.S. Military Academy; Captain, USA.

NEWELL, ANNIE LAURA — *Assistant Professor of Education*, 1958, 1960
A.B., LaGrange College; M.S., Ed.D., Auburn University.

*NEWMAN, MARY EMMA M. — *Instructor in Mathematics*, 1942
B.S., M.S., Auburn University.

NICHOLS, GROVER T. — *Associate Professor of Electrical Engineering*, 1947, 1950
B.E.E., Auburn University; M.S., Georgia Tech.

NICHOLS, JAMES O. — *Assistant Professor of Aerospace Engineering*, 1960
B.S.A.E., M.S.E., University of Alabama.

NICHOLS, MARK L. — *Research Lecturer, Agricultural Engineering*, 1917, 1957
B.S., Ohio State; M.S., Delaware; D.Sc., Clemson College.

NICHOLS, SAMUEL HARDING, JR. — *Professor of Chemistry*, 1944, 1955
B.S., M.S., Ph.D., Ohio State.

NIX, PAUL E. — *Head Baseball Coach*, 1963
B.S., Troy State; M.Ed., Auburn University.

*NIXON, LOCHRAN CONNOR, JR. — *Instructor in Education*, 1957, 1962
B.S., Troy State; M.Ed., Auburn University.

NOBLE, NAZZA — *Assistant Professor of Home Econimics*, 1961
B.S., East Tennessee State; M.S., Auburn University.

NORTON, JOSEPH D. — *Assistant Professor of Horticulture*, 1960
B.S., M.S., Auburn University; Ph.D., Louisiana State University.

NUNNERY, MICHAEL Y. — *Assistant Professor of Education*, 1959
B.S., Austin Peay State College; M.A., North Carolina State College; Ed.D., Tennessee.

*O'NEIL, JAMES M. — *Instructor in Mathematics*, 1958, 1962
B.S., Millsaps College; M.S., Auburn University.

*O'NEIL, PATRICIA — *Instructor in Speech*, 1961
B.S., Auburn University.

ORR, FRANK MARION — *Head Professor of Building Technology*, 1928, 1957
B.S., M.Arch., Auburn University.

ORR, HENRY P. — *Professor of Ornamental Horticulture*, 1947, 1962
B.S., Auburn University; M.S., Ph.D., Ohio State.

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B.A.Sc., University of Toronto.

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B.F.A., Rhode Island School of Design; M.A., New York University.

ORSINI, NICHOLAS — *Assistant Professor of Architecture*, 1959
B.F.A., Rhode Island School of Design; M.F.A., University of Pennsylvania.

*OTTIS, CHARLOTTE — *Instructor in Education*, 1959
A.B., Dakota Wesleyan University; M.A., Wisconsin.

OWSLEY, FRANK L., JR. — *Assistant Professor of History and Political Science*, 1960
A.B., Vanderbilt; M.A., Ph.D., Alabama.

OWSLEY, RICHARD M. — *Assistant Professor of Philosophy*, 1960
A.B., University of Louisville; M.A., Ph.D., Indiana.

PARKER, WILLIAM VANN — *Head Professor of Mathematics*, 1950
A.B., M.A., North Carolina; Ph.D., Brown.

PARTENHEIMER, EARL J. — *Associate Professor of Agricultural Economics*, 1960, 1961
B.S., M.S., Purdue; Ph.D., Michigan State.

PARTIN, ROBERT L. — *Professor of History and Political Science*, 1937, 1947
B.S., Murfreesboro State Teachers College; M.A., Ph.D., Peabody.

PATRICK, KEITH HILTON — *Assistant Professor of Agronomy*, 1954
B.S., M.S., Oklahoma A. & M.

PATRICK, WALTON R. — *Head Professor of English*, 1946, 1947
B.S., Mississippi State; M.A., Ph.D., Louisiana State.

PATTERSON, RICHARD MCCARTHY — *Associate Professor of Agronomy*, 1949, 1959
B.S., M.S., Florida; Ph.D., Pennsylvania State.

PATTERSON, TROY B., JR. — *Associate Professor of Animal Science*, 1957
B.S., Mississippi State; M.S., Ph.D., Texas A. & M.

PATTON, GEORGE W. — *Associate Professor of Economics and Business Administration*, 1943
A.Ph., Emory; M.A., Kentucky.

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B.S., Auburn University; M.S., Ph.D., Iowa State.

PEARSON, ROBERT WATTS — *Research Lecturer in Agronomy and Soils*, 1941, 1960
B.S., M.S., Mississippi State; Ph.D., Wisconsin.

PATTULLO, AMBROSE DUFFERIN — *Head of Circulation Department, and Instructor (Library)*, 1962
A.B., M.A., Michigan State University; M.A.L.S., University of Michigan.

PEET, HELEN HANNA — *Humanities Bibliographer and Instructor (Library)*, 1937, 1959
A.B., Mississippi College for Women; M.A., Tulane University.

PEET, TELFAIR B. — *Head Professor of Dramatic Arts*, 1931, 1957
A.B., Columbia; M.A., North Carolina.

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A.B., California; M.A., Ph.D., University of Southern California.

PETERSON, CHARLES H. — *Assistant Professor of Civil Engineering*, 1962
B.C.E., M.C.E., Auburn University.

PETERSON, JOE G. — *Associate Professor of Chemistry*, 1948, 1959
B.S., M.S., Auburn University.

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Certificate Diploma, Ulm School of Design.

PHILLIPS, JOE — *Assistant Professor, Textile Technology*, 1959, 1960
B.S.T.E., Auburn University.

PHILLIPS, RAY C. — *Assistant Professor of Education and Director of Student Teaching*, 1959, 1961
B.S., Middle Tennessee State College; M.A., George Peabody College for Teachers; Ed.D., Auburn University.

PITTS, ROBERT GILES — *Head Professor of Aerospace Engineering (P.E.)*, 1935, 1944
B.A.E., Auburn University; M.S., California Institute of Technology.

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Diploma, Polytechnic University, Budapest; Candidate of Tech Science, National Academy of Sciences, Budapest; Ph.D., Purdue University.

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A.B., Kalamazoo College; M.S., Kansas State; Sc.D., Johns Hopkins.

POSEY, HENRY G.—*Associate Professor of Forestry*, 1950, 1959
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PRATHER, ELIZABETH—*Assistant Professor of Home Economics*, 1952, 1960
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B.S., Auburn University; M.A., Columbia.

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B.S., Alabama College.

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A.B., Colorado; M.S., Ph.D., Ohio State.

PRIEST, MELVILLE S.—*Head Professor of Civil Engineering (P.E.)*, 1955, 1958
B.S., Missouri; M.S., Colorado; Ph.D., Michigan University.

PRUETT, HERMAN T.—*Associate Professor of Agricultural Education*, 1949, 1960
B.S., M.S., Auburn University.

PUNKE, HAROLD H.—*Professor of Education*, 1949
B.S., M.S., Illinois; Ph.D., Chicago.

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B.C.E., M.C.E., Auburn University.

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B.A., M.A., New York; Ph.D., Ohio State.

RASH, JOE M.—*Associate Professor of Pharmacy*, 1948
B.S., Carson-Newman; B.S., M.S., Auburn University.

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REA, RICHARD G.—*Instructor in Speech and Debate Coach*, 1960
B.S., Southwest Missouri State; M.A., Arkansas.

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REAGAN, HUGH D.—*Assistant Professor of History and Political Science*, 1948, 1953
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RENARD, BLANCA—*Assistant Professor of Music*, 1955
Graduate; National Conservatory, Santiago, Chile; Stern Conservatory, Berlin, Germany.

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REYNOLDS, ALFRED WADE—*Head Professor of History and Political Science*, 1913, 1950
B.S., M.S., Auburn University; M.A., Ph.D., California.

RICHARDS, DEAN BOYD—*Professor of Forestry*, 1951, 1961
B.S., Colorado A. & M.; M.S., Ph.D., Syracuse.

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B.S., Florida State; Major, USAF.

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B.S., M.A., Alabama; Ph.D., Peabody.

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B.S., M.Ed., Auburn University.

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B.S., M.S., University of Kentucky.

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B.S.C., M.A., Ph.D., Iowa.

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A.B., Randolph-Macon Woman's College; M.A., Alabama.

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D.V.M., M.S., Auburn University.

ROBINSON, A. JUDE — *Associate Professor of Mathematics*, 1923, 1935
B.S., Clemson; M.S., Emory.

ROBINSON, CECIL EUGENE — *Assistant Professor of Mathematics*, 1961
B.S., Auburn University; M.A., Ph.D., Alabama.

ROBINSON, WALTER J., JR. — *Assistant Professor of Aerospace Engineering*, 1959
B.A.A., Auburn University; M.B.A., University of Denver.

ROGERS, HOWARD TOPPING — *Head Professor of Agronomy and Soils*, 1942, 1951
B.S., Virginia Polytechnic Institute; M.S., Michigan State; Ph.D., Iowa State.

ROLLINS, GILBERT H. — *Associate Professor of Dairy Science*, 1948, 1953
B.S., M.S., Virginia Polytechnic Institute; Ph.D., Illinois.

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B.S., Florida Southern College.

ROSE, CHARLES S., JR. — *Assistant Professor of English*, 1960
A.B., Vanderbilt; M.A., Ph.D., Florida.

ROSE, EITHEL — *Professor of Home Economics*, 1959
B.S., M.S., Indiana State College; Ph.D., Ohio State.

ROSEN, FREDERIC BRUCE — *Assistant Professor in Education*, 1962
B.A.E., M.A.E., University of Florida.

ROSEN, MELVIN — *Assistant Professor of Health, Physical Education, and Recreation*, 1955, 1959
B.S., M.A., Iowa State.

ROSENBAUM, LAWRENCE J. — *Assistant Professor of Music*, 1961
B.M., University of Arizona; M.Music, University of Arkansas.

ROUSE, ROY D. — *Professor of Agronomy and Soils*, 1949, 1956
B.S., M.S., Georgia; Ph.D., Purdue.

RUSH, KATHRYN S. — *Assistant Professor of Home Economics*, 1949, 1951
B.S., M.S., Auburn University.

RUSSELL, CHESTER HAROLD — *Associate Professor of Education*, 1962
B.A., Troy State College; German Certificate, Army Language School; German Certificate, National Security Agency School; M.A., Florida State; Ph.D., Indiana University.

RUSSELL, DALLAS — *Associate Professor of Electrical Engineering*, 1959
B.S.E.E., M.S.E.E., University of Tennessee.

SALMON, WILLIAM D. — *Professor of Animal Science*, 1922, 1957
B.S., Kentucky; M.A., Missouri; Sc.D., Kentucky.

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B.S., Auburn University.

SAMUEL, JAMES E. — *Assistant Professor of Military Science*, 1962
B.S., Military Science, University of Maryland; Major, USA.

SANDERS, A. DEWEY — *Assistant Professor of Mathematics*, 1946, 1947
B.A., DePauw; M.A., Michigan.

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B.S., Washington State; M.S., Auburn University.

SANDERS, J. W. — *Assistant Professor of Speech*, 1952, 1959
B.A., Tampa; B.A., M.A., Florida.

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B.A., M.A., Texas Christian; Ph.D., State College of Washington.

SANDERS, W. C. *Instructor in Foreign Languages*, 1962
B.A., Wesleyan University; M.A., University of Connecticut.

SANFORD, L. G. *Instructor in Zoology*, 1960
B.S., Florence State College.

SAUNDERS, CHARLES RICHARD *Head Professor of Chemistry*, 1924, 1950
B.S., M.S., Auburn University; Ph.D., Nebraska.

SAUNDERS, LARRY A. *Instructor in English*, 1961, 1962
B.A., M.A., Memphis State University.

SAUNDERS, ROBERT LAWRENCE *Associate Professor of Education, Assistant to the Dean of School of Education, and Coordinator of Field Services*, 1957, 1960
B.S., M.S., Ed.D., Auburn University.

SCARBOROUGH, JOHN LEWIS *Associate Professor of Mechanical Engineering (P.E.)*, 1947, 1954
B.A.E., B.M.E., Auburn University; M.S., University of Alabama.

SCARSBROOK, CLARENCE E. *Professor of Soils*, 1953, 1959
B.S., Auburn University; Ph.D., North Carolina State.

SCHAER, WALTER A. *Associate Professor of Industrial Design*, 1960
Federal Certificate of Proficiency, Bienne Craft School; Federal Master's Diploma, Master's School for Furnishing and Interior Design; Diploma in Industrial Design, Ulm School of Design.

*SCHAUP, SUSANNE M. *Instructor in Foreign Languages*, 1961, 1962
B.A., Milwaukee-Downer College.

SCHEID, PAUL W. *Professor of Education*, 1957, 1960
A.B., Miami University, Ohio; A.M., Duke; Ph.D., Ohio State.

SCHELL, FRED G. *Head Professor of Large Animal Surgery and Medicine*, 1956, 1959
D.V.M., Auburn University.

SCHRADER, GLENN A. *Professor of Chemistry*, 1930, 1949
B.S., M.S., Beloit; Ph.D., Wisconsin.

SCHUESSLER, VIRADA K. *Counselor in Education*, 1961
B.A., Judson; M.Ed., Auburn University.

SEAL, JAMES LEWIS *Professor of Botany*, 1929, 1954
B.S.Agr., Clemson; M.S., Iowa State; Ph.D., Minnesota.

SENN, C. L. *Assistant Football Coach, Athletics*, 1945, 1948
B.S., Auburn University.

SESSOMS, MARGARET HANNAH *Catalog Librarian and Instructor (Library)*, 1960
A.B., Alabama College; M. of Librarianship, Emory University.

SEWELL, ANNIE MARIE *Instructor in English*, 1942
A.B., Huntingdon; M.S., Auburn University.

SHARP, BERT *Associate Professor of Education*, 1961
B.S., Mississippi College; M.Ed., Ed.D., Florida.

SHAW, WINFRED A. *Professor of Mechanical Engineering*, 1958
B.S.G.E., University of Mississippi; M.S.E.M., University of Texas; Ph.D., Stanford University.

SHELL, EDDIE WAYNE *Assistant Professor of Zoology-Entomology*, 1952, 1961
B.S., M.S., Auburn University; Ph.D., Cornell.

SHERLING, WILLIAM G. *Associate Professor of Aerospace Engineering (P.E.)*, 1947, 1954
B.A.E., Auburn University; M.S.A.E., Georgia Tech.

SHEWELL, JOHN ROBERT *Associate Professor of Physics*, 1960
B.S.P., M.S.P., Auburn University; Ph.D., Rice.

SHIELDS, ALAN J. *Assistant Professor of Sociology*, 1956, 1959
B.A., M.A., North Texas State College.

SHIH, CORNELIUS CHUNG-SHENG *Associate Professor of Civil Engineering*, 1959
B.S., National Taiwan University; M.S., Ph.D., Michigan State University.

SHUMARD, GORDON H. *Assistant Professor of Military Science*, 1960
B.S., U.S.M.A.; M. of E., Texas A. & M.; Lt. Col., USA.

SILVERMAN, STUART J. *Instructor in English*, 1961
B.A., Brooklyn College; M.A., Columbia University.

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SKELTON, ROBERT BEATTIE ..... *Head Professor of Foreign Languages*, 1939, 1954
A.B., Michigan State Normal; M.A., Ph.D., Michigan; Certificado, University of Brazil; Certificado, University of Chile.

SLAGH, TIM DENNIS ..... *Assistant Professor of Electrical Engineering*, 1959
B.S., Michigan College of Mining and Tech.; M.S., Auburn University.

SMITH, FLOYD S. ..... *Associate Professor of Mechanical Engineering (P.E.)*, 1946, 1955
B.S., Virginia Military Institute; B.S., B.M.E., M.S., Auburn University.

SMITH, ROBERT C. ..... *Assistant Professor of Animal Science*, 1961
B.S., Amherst College; M.S., Ph.D., University of Illinois College of Medicine.

SMITH, WILLIAM STEPHEN ..... *Professor of Speech*, 1952, 1959
B.Ed., N.I.S.T.C., DeKalb; M.A., Ph.D., Stanford.

SPANN, RANSON D. ..... *Professor of Electrical Engineering*, 1915, 1951
B.E., E.E., Auburn University.

SPARKS, FRANK M. ..... *Associate Professor of Physics*, 1943, 1946
B.S., Auburn University; M.A., Ph.D., Illinois.

SPEARS, WILLIAM D. ..... *Head Professor of Psychology*, 1961
A.B., M.Ed., University of Chattanooga; Ph.D., George Peabody College for Teachers.

SPENCER, LILLY HESTER ..... *Associate Professor of Home Economics*, 1928, 1935
B.S., M.S., Oklahoma A. & M.

SPIDLE, MARION WALKER ..... *Head Professor of Home Economics*, 1938, 1942
B.S., Alabama College; B.S., M.A., Columbia University.

SPRAGUE, ALBERT T., JR. ..... *Associate Professor of Electrical Engineering (P.E.)*, 1949
B.S., United States Naval Academy; M.S., Harvard.

SQUIERS, C. D. ..... *Associate Professor of Animal Science*, 1950
B.S., M.A., Ph.D., Missouri.

STALCUP, ROBERT JAMES ..... *Assistant Professor of Education*, 1960
B.A., Huron College; M.A., Ed.D., Nebraska.

STALNAKER, CARROLL C. ..... *Associate Professor of Economics and Business Administration*, 1937, 1946
B.A., State College of Iowa; M.A., Iowa.

STANALAND, EUGENE E. ..... *Instructor in Economics and Business Administration*, 1960
B.S., Huntingdon; M.B.A., Alabama.

STEELE, H. ELLSWORTH ..... *Research Professor of Economics and Business Administration*, 1949, 1951
B.A., M.A., Nebraska; Ph.D., Ohio State.

STEENSEN, DONALD H. J. ..... *Assistant Professor of Forestry*, 1960
B.S., Iowa State; M.F., Duke.

STEVENS, FRANK J. ..... *Professor of Chemistry*, 1947, 1959
B.S., Illinois; Ph.D., Iowa State.

STOKES, C. M. ..... *Associate Agricultural Engineer (P.E.)*, 1937, 1962
B.S., M.S., Auburn University.

STOVES, WILLIAM H. ..... *Assistant Professor of Industrial Laboratories*, 1946, 1949
B.S., M.S., Auburn University.

STRENGTH, D. RALPH ..... *Associate Professor of Animal Science*, 1961
B.S., M.S., Auburn University; Ph.D., Cornell.

STRONG, WILLARD L. ..... *Assistant Professor of Naval Science*, 1960
B.S., U.S. Naval Academy; B.A., Auburn University; Lieutenant Commander, USN.

STROUD, OXFORD ..... *Assistant Professor of English*, 1950, 1957
B.S., M.A., Auburn University.

STURKIE, DANA G. ..... *Professor of Agronomy*, 1925, 1942
B.S., Auburn University; M.S., Iowa State; Ph.D., Michigan State.

STURDIVANT, EDWIN C. ..... *Assistant Professor of Music*, 1962
A.B., Millsaps College; M.M., Louisiana State University.

STURROCK, WALTER ..... *Associate Professor of Electrical Engineering*, 1958
B.M.E., Cornell University.

*STYCOS, PHYLLIS ..... *Instructor of Music*, 1962
B.A., M.A., Ball State Teachers College.

STYCOS, ROLAND ..... *Assistant Professor of Music*, 1962
B.M., New England Conservatory of Music; M.M., Manhattan School of Music.

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A.B., Duke; M.A., Auburn University.

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B.S., Clemson; B.E.E., Auburn University; M.S.E.E., North Carolina State.

SWINGLE, HOMER SCOTT — *Professor of Zoology and Entomology*, 1929, 1939
B.S., M.S., Sc.D., Ohio State.

SYKES, MALTBY — *Professor of Art*, 1942, 1954
Studied: Wayman Adams, Diego Rivera, John Sloan, George C. Miller, Fernand Leger, Stanley William Hayter, and Andre Lhote.

SZILASSY, SANDOR — *Head of Science and Technology Department and Assistant Professor (Library)*, 1961
LL.D., University of Budapest; M.A.L.S., University of Indiana.

TALLY, JOYCE ELLEN — *Instructor in Speech*, 1962
B.S., M.S., University of Southern Mississippi.

TAMBLYN, JOHN W. — *Professor of Music*, 1948, 1962
B.S., Auburn University; M.Mus., Ph.D., Eastman School of Music.

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B.S., South Dakota School of Mines and Tech.; M.S., Brown University; Ph.D., Oklahoma State.

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B.S., U.S. Naval Academy.

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B.S., State University of New York; M.Ed., University of North Carolina.

TAYLOR, EDWARD B. — *Assistant Director of Engineering Extension*, 1957, 1960
B.S., Davidson College; B.S.T.M., North Carolina State; M.S., Columbia.

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A.B., University of Florida; M.A., Columbia University.

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D.V.M., Auburn University.

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B.S., M.S., Virginia Polytechnic Institute.

THOMASSON, STANLEY — *Assistant Professor of Architecture*, 1959
Certificate, Stanley Tech. Institute, London; B.Arch., Tulane University.

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B.S., Birmingham-Southern; M.S., Tulane; M.A., Michigan.

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B.S., Long Island University; Major, USAF.

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A.B., M.A., Ed.D., Kentucky.

TOMLIN, JAMES GROVER — *Instructor in Health, Physical Education, and Recreation*, 1958
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TORRANS, ANNE — *Instructor in Speech*, 1959
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*TRAYLOR, DONALD REGINALD — *Assistant Professor of Mathematics*, 1960, 1962
B.A., Texas; M.S., Ph.D., Auburn University.

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B.S., Oklahoma State; M.S., Iowa State.

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B.S., Southwestern State Teachers; M.A., Colorado State College of Education.

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B.M.E., Auburn University.

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D.B., M.A., University of Chicago.

VAUGHAN, JOHN T. — *Assistant Professor of Large Animal Surgery and Medicine*, 1955, 1959
D.V.M., Auburn University.

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B.S.M.E., B.S.E.E., M.S.M.E., Texas A. & M.; Ph.D., Stanford University.

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B.S., M.S., Columbia.

WALDO, MYRTICE R. — *Assistant Professor of Economics and Business Administration*, 1949, 1959
B.S., M.S., Auburn University.

WALDROP, HERBERT — *Instructor in Health, Physical Education and Recreation*, 1960
B.S., M.S., Auburn University.

WALL, MINNIE — *Head of Catalog Department and Assistant Professor (Library)*, 1947, 1959
A.B., Tift College; B.S.L.S., Peabody College for Teachers; M.Educ., Auburn University.

WALLS, BILLY G. — *Assistant Professor of Music*, 1961
B.M., Baylor; M.Mus., Manhattan School of Music.

WALKER, BRACK — *Instructor of Art*, 1961
B.A., Florence; M.F.A., University of Southern California.

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B.S., Mississippi College; M.A., Mississippi.

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WARD, CURTIS HOWARD — *Associate Professor of Chemistry*, 1957
B.S., Indiana State Teachers; M.S., University of Kentucky; Ph.D., Purdue.

WARE, LAMAR M. — *Head Professor of Horticulture*, 1923, 1931
B.S., M.S., Auburn University.

WARNER, JOHN ELLSWORTH — *Head of Social Science Department (Library) and Assistant Professor*, 1959, 1960
B.S., B.S.L.S., State College for Teachers (Albany, N.Y.); M.A., Teachers College, Columbia University.

WARREN, WILLIAM E. — *Instructor in Economics and Business Administration*, 1962
B.S., Florence State College; M.S., Tennessee.

WARREN, WILLIAM MICHAEL — *Head Professor of Animal Science*, 1955, 1957
B.S., Michigan State; M.S., Texas A. & M.; Ph.D., Missouri.

WASHINGTON, WILLIAM TAYLOR — *Instructor in Health, Physical Education, and Recreation*, 1958
B.S., Auburn University.

WATERS, WILLIAM T. — *Associate Professor of Textile Technology*, 1958
B.S.T.E., Clemson; M.S., Institute of Textile Technology.

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* Temporary.
** On leave.

WATWOOD, VERNON B. — *Professor of Civil Engineernig (P.E.)*, 1929, 1941
B.C.E., M.C.E., Auburn University.

WEAR, JOHN I. — *Professor of Soils*, 1939, 1959
B.S., M.S., Auburn University; Ph.D., Purdue.

WEAVER, ANDREW MALCOLM — *Assistant Professor of Education*, 1960
B.S., Tennessee Polytechnic Institute; M.A., Ed.D., Tennessee.

WEAVER, CHARLES HADLEY — *Head Professor and Westinghouse Professor of Electrical Engineering*, 1959, 1963
B.S.E.E., M.S.E.E., University of Tennessee; Ph.D., University of Wisconsin.

*WEISSINGER, RAE — *Instructor in English*, 1960, 1962
B.A., Augustana College.

WELLS, JOSEPH WILLARD — *Associate Professor of Architecture*, 1956
B.Arch., Cornell University; Fontainebleau School of Fine Arts, France.

WHITE, JOHN BENJAMIN — *Instructor in Forestry*, 1958
B.S.F., Georgia; M.F., North Carolina State.

WHITE, MORRIS — *Professor of Agricultural Economics*, 1950, 1960
B.S., Auburn University; M.S., Ph.D., Purdue.

WHITE, RAYMOND H. — *Professor of Education*, 1950, 1951
B.S., Southwest Missouri State; A.B., Drury; A.M., Chicago; Ed.D., Teachers College, Columbia.

WHITE, VIRGINIA C. — *Assistant Professor of Home Economics*, 1954, 1956
B.S., Alabama College; M.S., University of Tennessee.

WHITEFORD, ROBERT D. — *Associate Professor of Anatomy and Histology*, 1959
M.S., Iowa State; D.V.M., University of Georgia.

WIGGINS, AGEE M. — *Professor of Large Animal Surgery and Medicine*, 1946, 1959
M.S., Kansas State University; D.V.M., Auburn University.

WIGGINS, EARL L. — *Assistant Professor of Animal Science*, 1956
B.S., M.S., Oklahoma A. & M.; Ph.D., Wisconsin.

WILBANKS, MARY ELIZABETH — *Special Collections Librarian and Instructor (Library)*, 1959, 1962
A.B., Alabama College; M.A., Emory University; M.S.L.S., University of North Carolina.

WILHELM, WILLIAM J. — *Instructor in Engineering Graphics*, 1960
B.S.M.E., Auburn University.

WILKIN, LEON O., JR. — *Associate Professor in Pharmacy*, 1963
B.S., Loyola University; M.S., Ph.D., University of Texas.

WILLIAMS, BYRON B., JR. — *Professor of Pharmacology*, 1951, 1962
B.S., M.S., Ph.D., Florida.

WILLIAMS, DAVID J., III — *Instructor of Large Animal Surgery and Medicine*, 1961
D.V.M., B.S.A., University of Georgia.

WILLIAMS, ELIZABETH GRIMES — *Assistant Professor of Economics and Business Administration*, 1946, 1959
B.S., M.S., Auburn University.

WILLIAMS, ERNEST — *Professor of Mathematics*, 1934, 1948
B.S., Birmingham-Southern; M.S., Auburn University; Ph.D., Michigan.

WILLIAMS, HUGH O. — *Associate Professor of Art*, 1957, 1959
B.App.Art., Auburn University; M.A., Columbia.

WILLIAMS, JOHN H., JR. — *Assistant Professor of Naval Science*, 1962
B.S.M.E., Tufts University; Lieutenant, Junior Grade, USN.

WILLIAMS, MARVIN O. — *Assistant Professor of Aerospace Engineering*, 1942, 1944
A.B., Birmingham-Southern; B.A.E., Auburn University.

WILLIAMS, RALPH I. — *Professor of Air Science*, 1960
B.A., M.A., University of Maryland; Colonel, USAF.

WILLIAMSON, EDWARD C. — *Assistant Professor of History and Political Science*, 1957
A.B., M.A., Florida; Ph.D., Pennsylvania.

WILSON, LOWELL E. — *Assistant Professor of Agricultural Economics*, 1960, 1961
B.S., Murray State College; M.S., Kentucky; Ph.D., Illinois.

WILT, GERALD R. — *Instructor of Bacteriology*, 1962
B.S., Western Kentucky State College; M.S., Clemson.

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WINGARD, JOHN WILLIAM. *Assistant Professor of Industrial Laboratories*, 1957, 1962
B.S., Auburn University.

WINGARD, ROBERT EUGENE. *Research Professor of Chemical Engineering*, 1932, 1963
B.S., M.S., Auburn University.

WINKLER, JOHN K. *Assistant Professor of Large Animal Surgery and Medicine*, 1962
D.V.M., Colorado A. & M.

*WOLVERTON, CLYDE. *Instructor in Foreign Languages*, 1961
B.A., University of Akron.

*WOOD, HARVEY G. *Instructor in Physics*, 1958
B.A., Olivet College.

WOODALL, JAMES R. *Associate Professor of English*, 1952, 1957
B.S., Murray State; M.A., Kentucky; Ph.D., Vanderbilt.

*WOODLEY, ANNETTE. *Instructor in Economics and Business Administration*, 1959, 1962
B.S., Auburn University.

WOODLEY, CHARLES H. *Assistant Professor of Physiology and Pharmacology*, 1958, 1959
M.S., D.V.M., Auburn University.

YEAGER, J. H. *Professor of Agricultural Economics*, 1946, 1957
B.S., M.S., Auburn University; Ph.D., Purdue.

YORK, LEO WAYNE. *Head of Acquisitions Department and Assistant Professor (Library)*, 1960
B.Mus., University of Oregon; M.M.E., M.S.L.S., Florida State University.

YOUNG, LUTHER M. *Associate Professor of Health, Physical Education, and Recreation*, 1944, 1959
B.S., M.S., Auburn University.

YOUNG, RICHARD EARLE. *Instructor in Education*, 1959, 1961
B.S., Florence State; M.A., Putney Graduate School of Teacher Education; M.Ed., Auburn University.

*ZALLEN, EUGENIA M. *Instructor in Home Economics*, 1962
B.S., Auburn University; M.S., Purdue University.

ZALLEN, HAROLD. *Associate Professor of Pharmacy*, 1961
B.S., Northeastern University, Boston; Ed.M., Boston University; M.S., Ph.D., Purdue.

ZIEGLER, PAUL F. *Associate Professor of Chemistry*, 1949, 1958
B.S., Otterbein; M.S., Cincinnati.

ZIVKOVIC, PETER D. *Instructor in English*, 1960
B.S., M.A., Illinois.

ZURFLIEH, THOMAS PETER. *Instructor in Engineering Graphics*, 1960
B.S., Massachusetts Institute of Technology.

GRADUATE AND RESEARCH ASSISTANTS

ABRAMS, DAVID L. *Graduate Assistant in History and Political Science*, 1962
B.S., Alabama.

ADAMS, MARY MORTON. *Graduate Assistant in Institutional Research*, 1962
B.A., Southwestern (Memphis).

AGRUSTI, ROBERT ANTHONY. *Graduate Assistant in Mathematics*, 1961
B.A., Seton Hall University.

ANDERS, EDWARD B. *Research Assistant in Mathematics*, 1960, 1962
B.S., Louisiana Polytechnic Institute; B.S., Pennsylvania State University; M.E., M.S., Northwestern Louisiana State College.

ANDERSON, JERRY MAX. *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1961
B.M.E., Auburn University.

ANDERSON, PAUL LEE. *Graduate Assistant in Mechanical Engineering*, 1962
B.M.E., Auburn University.

APPEL, WARREN ALBERT. *Research Assistant in Chemistry*, 1961, 1962
B.S., Michigan College of Mining and Technology.

ASKEW, WILLIAM CREWS. *Graduate Assistant in Chemistry*, 1962
B.S., Auburn University.

BAILEY, E. LYNWOOD. *Graduate Assistant in Mechanical Engineering*, 1962
B.S.M.E., Auburn University.

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BARNES, RHETT GOODE, JR. — *Graduate Assistant in Learning Resources Center,* 1962
B.S., Auburn University.

BECK, GENE CULVER — *Graduate Assistant in Art,* 1962
B.A., Auburn University.

BECKETT, SIDNEY D. — *Research Fellow, Physiology and Pharmacology,* 1961
B.S., Mississippi State; D.V.M., Auburn University.

BLAIR, RALPH EUGENE — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation,* 1961
B.S.M.E., Auburn University.

BLANTON, JOHN ARNOLD — *Graduate Assistant in Economics and Business Administration,* 1962
B.S. in B.A., Auburn University.

BOLIN, JOHN — *Graduate Assistant in Educational Administration,* 1961
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BOURNE, JUDITH MAYTON — *Graduate Assistant in Home Economics,* 1961
B.S., Auburn University.

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BREAKFIELD, WILLIAM DALTON — *Graduate Assistant in Civil Engineering,* 1962
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BROCK, ROBERT E. — *Graduate Assistant in Pharmacy,* 1962
B.S., University of South Carolina.

BRYANT, F. DUDLEY — *Research Assistant in Physics,* 1962
B.S., Duke University.

BURNS, ELLIS B. — *Graduate Assistant in Educational Administration,* 1961
A.B., Saint Bernard; M.A., George Peabody College for Teachers.

BUSHEY, JOHN M. — *Graduate Assistant in Economics and Business Administration,* 1962
B.S., University of Pennsylvania.

CADENHEAD, A. KENNETH — *Graduate Assistant in Elementary Education,* 1962
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CARPENTER, ARTHUR D. — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation,* 1962
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B.S., Troy State; M.Ed., Auburn University.

CHENG, SHUI CHIH — *Graduate Assistant in Mechanical Engineering,* 1962
B.S., Taiwan Cheng Kung University.

CLULOW, CONNIE — *Graduate Assistant in English,* 1962
B.A., University of Arkansas.

CONNER, JERRY ANN — *Graduate Assistant in English,* 1961
B.S., Auburn University.

CONRAD, RAYMOND WALTER — *Research Fellow in Chemistry, National Defense Education Act,* 1961
B.S., University of Florida.

COOK, MILTON OLIN — *Graduate Assistant in Institutional Research,* 1962
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COONEY, ELVIA MARIE — *Graduate Assistant in Secondary Education,* 1962
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CRAIN, KATHERINE — *Graduate Assistant in English,* 1962
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CREEK, JOSEPH WILLIAM — *Graduate Assistant in Economics,* 1962
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CRENSHAW, EDWARD J. — *Graduate Assistant in Mechanical Engineering,* 1960
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CRESS, WILLIAM D. — *Graduate Assistant in Physics,* 1962
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CROSS, HARLAN EUGENE — *Graduate Assistant in Electrical Engineering,* 1962
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DANIEL, ANN — *Graduate Assistant in English*, 1961
B.S., Clemson.

DAVIS, CLYDE WILLIAMS, JR. — *Graduate Assistant in Mathematics*, 1962
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DAVIS, JOE BOC — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1962
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DENNEY, H. JOE — *Graduate Assistant in Psychology*, 1961
B.S., Auburn University.

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DIXON, NANCY M. — *Graduate Assistant in Psychology*, 1962
B.A., Auburn University.

DUCK, GEORGE F. — *Graduate Assistant in English*, 1962
B.S., Auburn University.

DUKE, HENRY PATRICK — *Graduate Assistant in Education*, 1962
B.S., Auburn University. (Resigned effective June 15, 1962.)

DWYER, JAMES EDWARD, JR. — *Graduate Assistant in Psychology*, 1961
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EDWARDS, W. THOMAS — *Graduate Assistant in Pharmacy*, 1962
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EVANS, BOYD A., JR. — *Graduate Assistant in Economics and Business Administration*, 1962
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FAILE, GARTH DALMAIN — *Graduate Assistant in Chemistry*, 1962
B.S., University of Alabama.

FEW, ALBERT B. — *Research Assistant in Small Animal Surgery and Medicine*, 1961
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FISHER, HOMER SANDERS, JR. — *Graduate Assistant in Economics and Business Administration*, 1962
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FITZPATRICK, MAJORIE H. — *Graduate Assistant in Mathematics*, 1952, 1960
B.S., Jacksonville State College; M.S., Auburn University.

FULLER, WILLIAM E. — *Graduate Assistant in English*, 1962
A.B., Georgia.

FULP, RONALD O. — *Research Assistant in Mathematics*, 1961, 1962
B.S., Wake Forest; M.S., Carolina.

GERBER, JACK — *Graduate Assistant in English*, 1962
B.A., University of Tampa.

GORDON, MAX EDWIN — *Graduate Assistant in Economics and Business Administration*, 1961
B.S., in A.A., Auburn University.

GREGORY, OUIDA JAN — *Graduate Assistant in History and Political Science*, 1961
B.A., Huntingdon.

GUTHRIE, RACHEL T. — *Supervisor Home Management House*, 1962
B.S., Auburn University.

HAINLIN, DAVID H. — *Graduate Assistant in Agricultural Education*, 1961, 1962
B.S., Florida State University.

HALL, RAYMOND RALPH — *Graduate Assistant in Mathematics*, 1962
B.A., Mississippi State University.

HANCOCK, CLARENCE J. — *Graduate Assistant in English*, 1962
B.A., Auburn University.

HANNAH, RAY — *Graduate Assistant in Chemistry*, 1960
B.S., Maryville College.

HARDY, J. WESLEY — *Graduate Assistant in Agricultural Education*, 1962
B.S., M.S., Jacksonville State College.

HARMON, GRADY RODNEY — *Graduate Assistant in Mechanical Engineering*, 1962
B.E.P., Auburn University.

HARRIS, CHARLES DAVID — *Graduate Assistant in Aerospace Engineering*, 1962
B.S.A.E., Auburn University.

HARRIS, ELEANOR A. — *Graduate Assistant in Home Economics*, 1962
B.S., Institutional Management, Alabama College.

HARRIS, GLENDA STEELE ..... *Laboratory Assistant*, 1962
B.S., Foods and Nutrition, Auburn University.

HARRISON, HAROLD J. ..... *Graduate Assistant in Electrical Engineering*, 1962
B.S.E.E., Auburn University.

HARTWIG, MARGARET F. ..... *Graduate Assistant in Mathematics*, 1960, 1962
B.A., University of Wisconsin.

HILBURN, JOHN ..... *Graduate Assistant in Electrical Engineering*, 1962
B.E.P., Auburn University.

HOAGLAND, DANIEL CLARKE ..... *Graduate Assistant in Mathematics*, 1961
B.S., M.S., University of Miami.

HODGE, HARRY F., JR. ..... *Graduate Assistant in Educational Administration*, 1961
B.S., M.S., Tennessee.

HSIEH, SHIH-YUNG ..... *Research Assistant in Physics*, 1961, 1962
B.S., Tunghai University.

HSU, TSONG-HAU ..... *Research Assistant in Chemistry*, 1962
B.S., National University of Amey.

INGRAM, EARL G. ..... *Graduate Assistant in History and Political Science*, 1962
B.A., Louisiana Polytechnic Institute.

INGRAM, GAYE RICE ..... *Graduate Assistant in English*, 1962
B.A., Louisiana Polytechnic Institute.

JACKSON, BOBBY DEAN ..... *Graduate Assistant in History and Political Science*, 1962
B.A., Furman.

JAMES, LEVY MOORE ..... *Graduate Assistant in Mathematics*, 1962
B.S., Auburn University.

JOHNSON, JAMES JOHN ..... *Graduate Assistant in Mathematics*, 1961
B.S., Southeastern Louisiana State College; M.S., Northwestern Louisiana State College.

JONES, BARBARA C. ..... *Graduate Assistant in English*, 1961
B.S., Auburn University.

JONES, JEANETTE H. ..... *Graduate Assistant in English*, 1961
B.S., Auburn University.

JONES, REX CHANDLER ..... *Graduate Assistant in Mathematics*, 1961, 1962
B.S., Troy State College; M.S., Auburn University.

KELTNER, WALLACE GENE ..... *Graduate Assistant in Chemical Engineering*, 1962
B.S. in Chemical Engineering, Auburn University.

KEY, JOHN WILTON ..... *Graduate Assistant in Education*, 1962
B.S., Troy State College.

KHLEIF, SUHAIL BASSIM ..... *Graduate Assistant in Mathematics*, 1961
B.S. in E.E., The Johns Hopkins University.

KILLINGSWORTH, THOMAS L. ..... *Graduate Assistant in Psychology*, 1961
B.S., Auburn University.

KING, CECIL M. ..... *Research Assistant in Physics*, 1962
B.S., M.S., Auburn University.

KINGHORN, ELIZABETH B. ..... *Graduate Assistant in History and Political Science*, 1962
B.A., Furman University.

KINGRY, GIBSON FRANK, JR. ..... *Graduate Assistant in Learning Resources Center*, 1962
A.A., Chipola Junior College; B.S.A., University of Florida.

KINZER, ELIZABETH ..... *Graduate Assistant in Learning Resources Center*, 1962
B.S., Livingston State College.

KIRKSEY, HOWARD GRADEN ..... *Research Fellow in Chemistry, National Defense Education Act*, 1961
B.S., Middle Tennessee State College.

KOSOLAPOFF, ALEXANDRA G. ..... *Graduate Assistant in Psychology*, 1962
B.S., Auburn University.

KUPFERBUSCH, KAREN FRANCES ..... *Graduate Assistant in Mathematics*, 1961
B.S., Jacksonville State College.

LAMAR, LEWIS W. ..... *Graduate Assistant in English*, 1962
B.S., Auburn University.

LANGDON, GOLDEN ISAAC ..... *Graduate Assistant in Educational Administration*, 1962
B.B.A., M.A., Marshall University.

LEISCHUCK, GERALD S. — *Graduate Assistant in Educational Administration*, 1962
A.B., M.A., Colorado State College

LEWIS, ROBERT F., JR. — *Graduate Assistant in Psychology*, 1962
B.S., M.S., M.Ed., Auburn University.

LIDDELL, WILL L., JR. — *Graduate Assistant in Mechanical Engineering*, 1959
B.M.E., Auburn University.

LINDSAY, ELLA SUE — *Graduate Assistant in Mathematics*, 1961
B.S., Auburn University.

LITTLETON, MARY LUCY — *Graduate Assistant Nursery School*, 1962
Florida State University.

LOCKRIDGE, FRANK B. — *Graduate Assistant in Civil Engineering*, 1961
B.S.C.E., Auburn University.

LOH, JACK CHIHYAU — *Graduate Assistant in Chemistry*, 1960
B.S., University of Texas.

LONG, GEORGE MORRISON — *Graduate Assistant in Chemical Engineering*, 1962
B.S. in Chemical Engineering, Auburn University.

LUGER, DONALD — *Graduate Assistant in Civil Engineering*, 1962
B.S.C.E., Auburn University.

LYNN, DONALD W. — *Graduate Assistant in Mathematics*, 1962
B.S., Auburn University.

LYTLE, JOHN H. — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1962
B.S.M.E., Auburn University.

MAGHSOODLOO, SAEED — *Graduate Assistant in Mathematics*, 1962
B.S., Auburn University.

MAJOR, PAUL E. G. — *Graduate Assistant in Mathematics, 1958*, 1962
B.S., M.S., Auburn University.

MARCINOWSKI, MARY E. — *Graduate Assistant in Mathematics*, 1962
B.A., Huntingdon. (Resigned effective December 15, 1962.)

MARSHALL, DAVID LEE — *Research Fellow in Chemistry, National Defense Education Act*, 1960
B.S., Auburn University.

MASSEY, FRED A. — *Graduate Assistant in Mathematics*, 1961
B.S., Howard College.

MCELROY, DERWYN — *Graduate Assistant, International Paper Company Foundation Program in Secondary Education*, 1900
B.S., Florida State; M.S., Auburn University.

MCKINNY, MAX — *Graduate Assistant, International Paper Company Foundation Program in Secondary Education*, 1961
B.S., Troy State.

MCMANUS, JOHN B. — *Graduate Assistant in Mathematics*, 1961
B.S., Auburn University. (Resigned effective June 15, 1962.)

MILLER, JAMES E. — *Graduate Assistant in Mathematics*, 1962
B.S., Auburn University.

MITCHELL, EILEEN — *Graduate Assistant in English*, 1960, 1962
A.B., Berry College.

MIYOSHI, SHIGENORI — *Research Assistant in Economics and Business Administration*, 1961
B.A., Kagawa University.

MOON, TAK JIN — *Graduate Assistant in Chemistry*, 1960
B.S., M.S., Yon-Sei University.

MOORE, JOHN PEYTON — *Research Assistant in Physics*, 1961, 1962
B.E.P., Auburn University.

MORGAN, JAMES OTIS — *Graduate Assistant in Mathematics*, 1962
B.S., Southeastern Louisiana College.

MORRIS, CLETUS EUGENE — *Graduate Assistant in Chemistry*, 1960
B.S., Auburn University.

MORRIS, NANCY — *Graduate Assistant in Chemistry*, 1960
A.B., LaGrange College.

MORRISON, PEGGE — *Graduate Assistant in Education*, 1962
B.S., Jacksonville State; M.S., Auburn University.

MOSELEY, MARTHA HELEN — *Research Fellow in Chemistry, National Defense Education Act*, 1960
B.S., Auburn University.

MURPHY, JULIA HARRIS — *Graduate Assistant in Mathematics*, 1962
B.S., Auburn University.

MURRAY, R. JAY — *Graduate Assistant in Chemistry*, 1961
B.S., University of Utah.

MYERS, DALE KAMERER — *Research Fellow in Chemistry, National Defense Education Act*, 1960
B.S., Berea College.

NAHRSTEDT, GARY — *Graduate Assistant, International Paper Company Foundation Program in Secondary Education*, 1960, 1961
B.S., Florida State; M.S., Auburn University. (Resigned effective December 15, 1962.)

NEWDOME, CASIMIR P. — *Graduate Assistant in Elementary Education*, 1962
B.S., Ohio Northern University; M.A., Alabama.

NEWMAN, WALTER H. — *Graduate Assistant in Pharmacy*, 1962
B.S., Auburn University.

NICHOLS, JOHN A., III — *Graduate Assistant in Civil Engineering*, 1962
B.S.C.E., Auburn University.

NIX, GORDON H. — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1962
B.S.M.E., Auburn University.

ORR, WALTON A. — *Graduate Assistant in Mechanical Engineering*, 1961
B.M.E., Auburn University.

OSBORNE, THOMAS L. — *Graduate Assistant in Electrical Engineering*, 1961
B.S.E.E., Auburn University.

OTTINGER, RICHARD E. — *Graduate Assistant in Health, Physical Education and Recreation*, 1961
B.S., M.S., Tennessee.

PATRENOS, JAMES HIRAM — *Graduate Assistant in Secondary Education*, 1962
B.S., Troy State; M.Ed., Chicago Musical College.

PATTERSON, LUCY HOLLOWAY — *Graduate Assistant in English*, 1961
A.B., Westhampton College University of Richmond.

PATRICK, LEWIS WAYNE — *Graduate Assistant in Physics*, 1962
B.E.P., Auburn University.

PIAZZA, JOSEPH C. — *Graduate Assistant in Secondary Education*, 1962
B.S., Auburn University.

PLEMMONS, ROBERT JAMES — *Graduate Assistant in Mathematics*, 1962
B.S., Wake Forest.

POLLARD, REGINALD BROWN — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1962
B.S.M.E., Auburn University.

PRICE, JAMES WOOD — *Graduate Assistant in Mathematics*, 1961
B.S., Troy State College.

PRUETT, JACK KENNETH — *Graduate Assistant in Pharmacy*, 1962
B.S., Auburn University.

QUENNELLE, PEGGY DIANE — *Graduate Assistant in English*, 1961
B.S., Auburn University. (Resigned effective April 20, 1962.)

RANEY, DOUGLAS — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1961
B.S.M.E., Auburn University.

RANSON, WILLIAM FARRIS, III — *Graduate Assistant in Mechanical Engineering, Auburn Research Foundation*, 1962
B.S.M.E., Auburn University.

RAY, JIMMY HAROLD — *Graduate Assistant in Mechanical Engineering*, 1960
B.S.M.E., Auburn University.

READ, ROBIN THOMAS — *Graduate Assistant in Psychology*, 1962
B.A., Western Reserve University.

REED, MARVIN ROY — *Graduate Assistant in Mathematics*, 1961
B.S., Austin Peay State College.

RHODES, KISLER CLAYTON — *Graduate Assistant in Chemistry*, 1962
A.B., Berry College.

RICHARDS, THEODORE LAWRENCE — *Graduate Assistant in Psychology*, 1962
B.A., Auburn University.

RICHARDS, TOMMY JAY—*Graduate Assistant in Mathematics*, 1962
B.S., Auburn University.

RIDENHOUR, LOVIC WESLEY—*Graduate Assistant in Mechanical Engineering*, 1962
B.S.M.E., Auburn University.

ROANE, RICHARD ALLEN—*Graduate Assistant in Electrical Engineering*, *Auburn Research Foundation*, 1962, 1963
B.E.E., Auburn University.

ROBERSON, JERE WILLIAM—*Graduate Assistant in History and Political Science*, 1962
B.S., Tennessee Polytechnic Institute.

RONALD, THOMAS GROTJAN—*Graduate Assistant in Educational Administration*, 1962
B.S., Auburn University; M.A., Appalachian State Teachers College.

ROSE, BARBARA HAYMAN—*Graduate Assistant in Mathematics*, 1962
B.A., University of Florida.

ROSENBERG, SONDRA—*Graduate Assistant in English*, 1962
B.A., Brooklyn College.

ROSENTHAL, ARTHUR E.—*Post-doctoral Fellow in Chemistry*, 1961
Ph.D., Harvard University; Post-doctoral Fellow, Cambridge University.

RUPP, CHARLES CHRISTOPHER—*Graduate Assistant in Electrical Engineering*, 1962, 1963
B.S.E.E., Auburn University.

SCHILLINGS, PAUL L.—*Graduate Assistant in Mathematics*, 1962
B.S.M.E., Kings Point (USMA).

SCHNEIDER, RAYMOND W.—*Graduate Assistant in Physics*, 1962
B.S., Virginia Polytechnic Institute.

SCHOOR, WILHELM PETER—*Graduate Assistant in Chemistry*, 1962
B.S., Auburn University.

SCHMITH, JOHN EDSEL—*Graduate Assistant in Mathematics*, 1961
B.S., Auburn University. (Resigned effective December 15, 1962.)

SEO, HYO-KYOUNG—*Research Assistant in Physics*, 1962
B.S., Yunsei University.

SHABO, LINDA LEE—*Graduate Assistant in History and Political Science*, 1962
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SHUMACK, RONALD LEE—*Graduate Assistant in Agricultural Education*, 1962
B.S., Auburn University.

SIMMONS, WILLIAM SAMUEL—*Graduate Assistant in Chemistry*, 1961
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SINGH, RAMESHWAR—*Graduate Assistant in Civil Engineering*, 1962
B.S.C.E., Auburn University.

SMITH, BRUCE H.—*Graduate Assistant in Economics and Business Administration*, 1962
A.B., Lenoir Rhyne College.

SMITH, JAMES LYNN—*Graduate Assistant in Physics*, 1962
B.S., Mississippi Southern College.

SMITH, WESLEY EARL—*Graduate Assistant in Chemistry*, 1959
B.S., Maryville College.

SMITH, W. LARRY—*Graduate Assistant in Mathematics*, 1960
B.S., Mississippi College. (Resigned effective September 15, 1962.)

SPIKES, PAUL W.—*Graduate Assistant in Mathematics*, 1960, 1962
B.S., M.A., in Ed., Mississippi Southern.

STEVENSON, CLARENCE W.—*Graduate Assistant in Mechanical Engineering*, 1962
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STEWART, RICHARD H.—*Graduate Assistant in Educational Administration*, 1961
B.A., M.A.E., Florida.

SUEN, KING FOO—*Research Assistant in Physics*, 1961, 1962
B.A., International Christian University.

SUTHERLIN, JANET J.—*Graduate Assistant in English*, 1961
A.B., LaGrange College.

SWANSON, CHARLES E.—*Graduate Assistant in Chemistry*, 1961
B.S., University of Illinois.

TACKETT, JESSE LEE—*Graduate Assistant in Chemistry*, 1960, 1962
A.S., Tarleton State College; B.S., Texas A. & M.; M.S., Auburn University.

TAYLO, JAMES THOMAS ..... *Graduate Assistant in Mathematics*, 1962
B.A., Arkansas; M.S., Auburn University.

TAYLOR, LAWRENCE BOSTON ..... *Graduate Assistant in Engineering Graphics*, 1962
B.M.E., Auburn University.

TAYLOR, ZELMA LOWELL, JR. ..... *Graduate Assistant in Chemical Engineering*, 1962
B.S., University of Idaho.

TEAGUE, PATRICIA ..... *Graduate Assistant in English*, 1962
B.A., Rollins College.

TEMPLE, HERBERT L. ..... *Graduate Assistant in Mathematics*, 1962
B.S., M.S., Northwestern State College of Louisiana.

THOMAS, CAROL ..... *Graduate Assistant in English*, 1962
B.S., Auburn University.

TOWNLEY, JANICE FERN ..... *Graduate Assistant in English*, 1961
B.A., LaGrange College.

VORIS, FLORENCE SYLVIA ..... *Graduate Assistant in Chemistry*, 1961
B.S., University of California.

WALKER, EDWARD E. ..... *Graduate Assistant in Civil Engineering*, 1962
B.S.C.E., Auburn University.

WALKER, RALPH W., II ..... *Graduate Assistant in Learning Resources Center*, 1962
B.S., M.S., American University.

WALTER, WILLIAM A. ..... *Graduate Assistant in Electrical Engineering*, 1960
B.S., Auburn University. (Resigned effective December 16, 1961.)

WASHINGTON, TERRY L. ..... *Graduate Assistant in Economics and Business Administration*, 1962
B.S., Auburn University.

WATSON, CAROLYN L. ..... *Graduate Assistant in History and Political Science*, 1961
B.S., Georgia Southern College.

WELLS, JOHN ARTHUR ..... *Graduate Assistant in Chemistry*, 1961
B.S., University of Florida.

WELSH, BERNARD HOWARD ..... *Graduate Assistant in English*, 1962
B.A., Livingston State College.

WHIPPLE, KENNETH E. ..... *Research Assistant in Mathematics*, 1961, 1962
B.S., Auburn University.

WIEGAND, KARL EDWARD ..... *Graduate Assistant in Chemistry*, 1961
B.S., Auburn University.

WIGGINS, DWIGHT L., JR. ..... *Graduate Assistant in Mechanical Engineering*, 1962
B.S.M.E., Auburn University.

WILLIAMS, KENNETH NEAL ..... *Graduate Assistant in Mathematics*, 1962
B.E.E., Auburn University. (Resigned effective December 15, 1962.)

WILLS, EDWARD LLOYD ..... *Graduate Assistant in Physics*, 1962
B.S., Auburn University.

WOOLFOLK, BYRON EUGENE ..... *Graduate Assistant in Chemistry*, 1962
B.S., Auburn University.

ADMINISTRATIVE STAFF

ADAMS, J. NOLAN — *Resident Counselor, Magnolia Dormitories,* 1962
B.S., Florida State University.

ADAMS, WILLIAM ROY — *Assistant in Electrical Engineering, Auburn Research Foundation,* 1962
B.S.E.E., University of Tennessee.

AGERTON, MARGARET ANNE — *Payroll Clerk, Business Office,* 1961

ALLGOOD, JAMES L. — *Maintenance Custodian, Women's Dormitories,* 1954

AMENT, B. DONALD — *Personnel Assistant, University Personnel Office,* 1960
B.S., Central Missouri State College.

ANDERS, JOLENE T. — *Senior Secretary, President's Office,* 1960
B.S., Auburn University. (Resigned effective May 31, 1963.)

ANDERSON, FRED E. — *Education Training Specialist,* 1959
Staff Sergeant, USAF.

ATCHESON, THOMAS E. — *Photographer, Photographic Services,* 1959

ATTLEBERGER, FREDERICK RAYMOND — *Laboratory Technician, Infirmary,* 1941
M.T., Franklin School of Science and Arts.

BAILEY, BESSIE — *Chief Operator PBX, Buildings and Grounds,* 1945

BARNES, ANNA P. — *Head Resident, Lupton Hall and College Chaperone,* 1945, 1956
B.M., Judson.

BARROW, WILLIAM OWENS — *Counselor, Student Counseling Service,* 1948, 1951
A.B., Birmingham-Southern; M.A., Peabody.

BARTEE, ANNETTE M. — *Bookkeeper, Food Service,* 1951, 1957

BARTON, FREIDA C. — *Head Resident of Dana Gatchell Hall,* 1956, 1962

BEAR, ROBERT J. — *Comptroller and Assistant Treasurer, Business Office,* 1961
B.S., Cornell University; M.B.A., George Washington University.

BEASLEY, JOAN — *Senior Clerk, University Personnel Office,* 1962

BECKWITH, WILLIAM H. — *Director of Sports Public Relations,* 1951, 1958
B.S., Auburn University.

BERGLAND, GARY — *Producer-Director, Educational TV,* 1961
B.S., Iowa State University.

BICKEL, MARGARET E. — *Senior Tabulating Machine Operator, Business Office,* 1945, 1959

BICKEL, O. W. — *Assistant to Director, Buildings and Grounds,* 1940, 1945

BLACK, HENRY G. — *Electronics Technician in Industrial Laboratories, Auburn Research Foundation,* 1961

BLAKE, BRUCE D. — *Senior Clerk, School of Science and Literature,* 1947, 1959
B.S., Auburn University.

BLODGETT, FRANK EDWARD — *Producer-Director, Educational TV,* 1962
B.S., M.A., University of Florida.

BONEY, LOUISE B. — *Cashier, Business Office,* 1945, 1959

BORDEAUX, VESTAL H. — *Fire Control Technician First Class, Naval Science,* 1960

BOWMAN, JOSEPH R. — *Construction Engineer, Buildings and Grounds,* 1945

BRACKIN, HERBERT GLENN — *Engineering Aide, Educational TV,* 1960
B.S., Auburn University.

BRADLEY, MARY H. — *Assistant to the Dean of Women,* 1962
B.S., M.A., University of Alabama.

BRENKERT, KARL, JR. — *Assistant Director of Engineering Experiment Station,* 1960
B.S.E., University of Michigan; M.S., Ph.D., Stanford University.

BRINEY, JAMES R., III — *Senior Systems Analyst, Computer Center,* 1959, 1962
B.S., Auburn University.

BRINSFIELD, ALLEN E. — *Storekeeper First Class, Naval Science,* 1962

BRITTAIN, JOYCE T. — *Senior Secretary to Dean of Engineering,* 1957, 1960

BRITTAIN, R. L. — *Manager, Magnolia Dormitories,* 1957
B.F.A., Georgia; M.A., Columbia.

BROADHEAD, HOWARD K. — *Counselor, Student Counseling Center,* 1962
B.A., M.Ed., Auburn University.

BROTHERS, JAMES R. — *Assistant in Electrical Engineering, Auburn Research Foundation,* 1962
B.S.E.E., Auburn University.

BRUMFIELD, EDWARD JAY — *Admissions Officer,* 1953, 1961
B.A., M.A., University of Kentucky.

BURGESS, DONALD LOUIS — *Production Supervisor, Educational TV*, 1961, 1962
B.A., University of Nebraska; M.S., Syracuse University.

BURKES, PAUL L. — *Sergeant First Class, Military Science*, 1962

BUSH, PATRICIA, R.N. — *Nurse, Infirmary*, 1962

CAIRNS, LOIS E. — *Senior Secretary, Architecture Administration*, 1961, 1962

CAINE, LEON D. — *Floor Maintenance Foreman, Buildings and Grounds*, 1946, 1957

CANADAY, HAROLD L. — *Track Motor Maintenance Instructor*, 1962
Specialist Five, USA.

CAPPS, FRAZEE D. — *Assistant Head Resident, Auburn Hall*, 1962
B.S., Texas Woman's University.

CARGILE, TRUDY — *Editor, University News Bureau, University Relations*, 1962

CARGILE, ROY C. — *Bursar, Business Office*, 1945
B.S., M.S., Auburn University.

CARTER, MARY ANN — *Ticket Clerk, Athletics*, 1962

CHAPMAN, RUPERT DANIEL, JR. — *Senior Pilot, Auburn School of Aviation*, 1962

CHEN, RUTH J. — *Payroll Clerk, Business Office*, 1962

CLAUSEN, GEORGE E., JR. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

CLOYD, THOMAS C. — *Warehouse Manager, Food Service*, 1946, 1951

CONARY, FRANKLIN M. — *Master Sergeant, Military Science*, 1957
B.S.Ed., Auburn University.

CONWAY, LEONARD — *Building Custodian Supervisor, Magnolia Dormitories*, 1960

COOK, CLARENCE E. — *Director of Auburn Union*, 1960, 1962
B.A., M.A., Birmingham-Southern College.

COOK, JAMES W. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

COPPEDGE, HELEN C. — *Dietitian, Alumni Cafeteria*, 1952, 1953
B.S., Oklahoma A. & M.

*CORR, RALEIGH — *Laboratory Mechanician, Physics*, 1958

COURSON, JAMES LAFAYETTE — *Graduate Counselor, Magnolia Dormitories*, 1960 1962

CREEK, GLORIA, R.N. — *Nurse, Infirmary*, 1960

CULLARS, J. W. — *Maintenance Custodian, Magnolia Dormitories*, 1945, 1952

CULVER, HUBERT R. — *Assistant Supervisor of Vocational Agriculture*, 1945, 1958
B.S., M.S., Auburn University.

DAVIS, JAMES S. — *Sergeant First Class, Military Science*, 1962

DAVIS, LUTHER E. — *Laboratory Mechanician, Textile Technology*, 1955

DAVIS, MARY LOU — *Assistant Dietitian, Women's Dining Hall*, 1961
B.S., Auburn University.

DAVIS, MYRTLE K. — *Senior Secretary, Business Office*, 1959, 1961

DAWSON, MILLARD E. — *Chief Security Officer, Buildings and Grounds*, 1951

DENNIS, MARIANNE — *Laboratory Technician A, Anatomy and Histology*, 1958, 1959

DENSON, ROBERT V. — *Program Director, Auburn Union*, 1962
B.S., M.S., Auburn University; M.E., Peabody College.

DEVALL, ELNORA — *Assistant Dietitian, Magnolia Dining Hall*, 1960
B.S., Syracuse; M.S., Auburn University.

DILWORTH, BEN P. — *Assistant Supervisor of Vocational Agriculture*, 1946, 1958
B.S., Mississippi State; M.S., Auburn University.

DIXON, CAROLYN J. — *Senior Clerk, School of Science and Literature*, 1960, 1962
B.S., Auburn University.

DIXON, GWENDOLYN MCDONALD — *Laboratory Technician A, Home Economics*, 1962
B.S., Tennessee Polytechnic Institute.

DOLER, MARY RUTH — *Laboratory Technician A, Home Economics*, 1959

DOROUGH, J. D. — *Pest Control Foreman, Buildings and Grounds*, 1949

DUGGER, FOWLER, JR. — *Administrative Assistant, Editor, Development Publications*, 1953, 1960
A.B., University of Alabama; M.A., Duke.

DUNN, BERTA — *Administrative Secretary and Secretary to Board of Trustees, President's Office*, 1919, 1959

DUPREE, JAMES E. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1959
B.S.E.E., Auburn University.

* Temporary.

EDEN, THOMAS MCDONALD — *Producer-Director, Educational TV*, 1955, 1962
B.S., Auburn University.

EDWARDS, CLERCIE SMALL — *Assistant Registrar, Registrar's Office*, 1938, 1945
A.B., Huntingdon College.

EVANS, HARRY D. — *Education Training Specialist*, 1961
Staff Sergeant, USAF.

FARLEY, WALTER SCOTT — *Manager, Graduate Placement Office*, 1948
B.B.A., Auburn University.

FAULKNER, LEWIS W. — *Shop Mechanician, Industrial Laboratories*, 1952

FAUST, WILLIAM E. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1961
B.S.E.E., Auburn University.

FILES, A. J. — *Laboratory Mechanician, Physics Department*, 1959

FLYNN, HARRY RENWICK — *Engineer, Educational TV*, 1960, 1962

FORBUS, MARY CECIL — *Dietitian, South Women's Dining Hall*, 1962
B.S., Alabama College.

FOSTER, GEORGE C. — *Assistant to the Dean, School of Science and Literature*, 1952
B.S., Auburn University.

°GAILLARD, JOHN THOMAS — *Recording Supervisor, Educational TV*, 1962

GALLOWAY, ELOISE — *Senior Clerk, Admissions Office*, 1960, 1962

GIBSON, HOMER FRANKLIN — *Assistant Supervisor of Vocational Agriculture*, 1937, 1958
B.S., M.S., Auburn University.

GLISSON, GLENN A. — *Education Training Specialist*, 1960
Staff Sergeant, USAF.

GRAVES, MILTON LOCKE — *Chief Clerk, Buildings and Grounds*, 1962
B.S.I.M., Auburn University.

GRAY, LEON A., JR. — *Laboratory Mechanician, Civil Engineering*, 1956

GREEN, HOWARD W. — *Subject Matter Specialist in Vocational Agriculture*, 1948, 1958
B.S., M.S., Auburn University.

GRIMMER, GLYNN T. — *Architectural Draftsman, Buildings and Grounds*, 1959

GRITZ, INEZ B. — *Laboratory Technician A, Home Economics*, 1961
B.A., Auburn University.

HAMMETT, ROBERT E. — *Assistant in Chemical Engineering, Auburn Research Foundation*, 1962
B.S.Ch.E., Univ. of Delaware; M.S., Auburn Univ.

HAMMOCK, E. T., MRS. — *Nurse, Infirmary*, 1952

HANEY, PATTIE — *Administrative Secretary, Alumni Office*, 1934, 1959

HATCHETT, LOUISE R. — *Switchboard Operator, Buildings and Grounds*, 1959

HATMAKER, JOHN W. — *Supply Sergeant, Army ROTC*, 1962

HAWKINS, CARL J. — *Shop Foreman, Buildings and Grounds*, 1959

HAWKINS, HERBERT N. — *Assistant Director for High School Relations, University Relations*, 1962
B.S., M.S., Auburn University.

HAYES, GERALD EUGENE — *Art and Staging Supervisor, Educational TV*, 1962
B.A., Auburn University.

HEFNER, ROY — *Shop Mechanician, Industrial Laboratories*, 1953

HENRY, NOLAN G. — *Gunnery Sergeant, Naval Science*, 1961

HENRY, PAUL W. — *Assistant Business Manager, Business Office*, 1954

HINES, MALISSA C. — *Head Resident of Dormitory B*, 1960, 1962

HILL, A. A. — *Electrical Foreman, Buildings and Grounds*, 1943

HOLLINGSWORTH, MABEL P. — *Head Resident of Broun Hall*, 1956

HOOD, RICHARD L. — *Assistant Janitor Foreman, Buildings and Grounds*, 1957

HORNSBY, JESSIE DOWDLE — *Laboratory Mechanician, Mechanical Engineering*, 1961

HOWARD, MILFORD K. — *Trainer, Athletics*, 1948
B.S., Auburn University.

HUDSON, BILLY — *Paint Foreman, Buildings and Grounds*, 1962

HUDSON, FRANK L. — *Building Custodian Supervisor of Auburn Union*, 1959

HUDSON, PARIS L., JR. — *Education Training Specialist*, 1962
Tech. Sergeant, USAF.

HUFF, ATLAS B. — *Head Resident of Owen Hall*, 1962

° Temporary.

JACKSON, LESLIE W. — *Motor Sergeant, Army ROTC*, 1955
Sergeant First Class, USA.

JENKINS, ELIZABETH E. — *Head Resident of Harper Hall*, 1954, 1956

JENKINS, FRANK W. — *Counselor III, Vocational Rehabilitation Service*, 1949, 1962
A.B., Emory University; M.Ed., Auburn University.

JOLLY, H. H. — *Laboratory Mechanician, Aerospace Engineering*, 1957

JONES, ANNIE MERL, R.N. — *Nurse, Infirmary*, 1951, 1955

JONES, CELIA — *Laboratory Technician A, Pathology and Parasitology*, 1961

JONES, HERMAN PATRICK — *Counselor, Student Counseling Service*, 1962
B.S., Business, Indiana University; M.S. in Guidance, Indiana University.

JONES, SUE S. — *Senior Clerk, Infirmary*, 1958, 1959

JONES, WENDELL — *Coordinator of TV Instruction, Educational TV*, 1962
B.S., Iowa State University.

JONES, WILLIAM L. — *Supervisor, Duplicating Service*, 1948, 1959

KENNEDY, MARY JO — *Dietitian, Plainsman Dining Hall*, 1956, 1959
B.S., Auburn University.

KING, ALICE B. — *Senior Secretary, Buildings and Grounds*, 1948

KING, GAYE — *Head Resident of Glenn Hall*, 1956

KING, LESTER C. — *Supervisor of Photographic Services*, 1949, 1962

KIRKWOOD, ALICE P. — *Chief Payroll Clerk, Business Office*, 1951, 1959

KLASE, NORMAN N. — *Chief Yeoman, Naval Science*, 1961

KNAPP, BYRON S., M.D. — *Assistant Director of Student Health*, 1961
B.S., M.D., Wayne University.

KNAPP, FRANCES D. — *Nurse, Infirmary*, 1961

*KROME, HENNING — *Graduate Counselor, Magnolia Dormitory*, 1961, 1962

LEE, LUTHER J. — *Master Sergeant, Military Science*, 1962

LEE, URSULA S. — *Senior Clerk, Registrar's Office*, 1962
A.A., Wright Junior College, Chicago; B.A., Elmhurst College.

LESTER, LORAYNE P. — *Senior Secretary, Auburn Research Foundation*, 1958, 1961

LEWIS, ESTHER C. — *Head Resident of Little Hall*, 1962

LEWIS, HOMER N. — *Livestock Specialist, Vocational Agriculture*, 1950, 1959
B.S., M.S., Auburn University.

LORD, HAROLD F. — *Supply Custodian, AF ROTC*, 1961

LOWE, ROBERT HENRY — *Assistant Campus Foreman, Buildings and Grounds*, 1962

LYLE, NANCY D. — *Assistant Dietitian, South Women's Dining Hall*, 1962

LYNN, JANICE P. — *Nurse, Infirmary*, 1962
(Resigned effective December 31, 1962.)

MADDOX, ROBERT — *Master Sergeant, Military Science*, 1962

MADDUX, KAY J. — *Senior Secretary, University Relations*, 1961, 1962
B.A., University of Tennessee.

MARTIN, JOSEPH M. — *Education Training Specialist*, 1962
Tech. Sergeant, USAF.

MARTIN, LEWIS C., JR. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

MCCONNELL, FRANCES — *Laboratory Technician A, Pathology-Parasitology*, 1958, 1959

MCCULLERS, GAIL HAYNES — *Psychometrist, Student Counseling Service*, 1961
B.S., Auburn University.

MCGOWEN, DRUSILLA BOONE — *Assistant Editor, News Bureau, University Relations*, 1962

MCKINLEY, MARY MILLER — *Head Cashier, Business Office*, 1938, 1959

MCPHERSON, BYRON WAYNE — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

MEADOWS, JAMES A. — *Laboratory Mechanician, Textile Technology*, 1962

MILLER, AUBREY ALFRED — *Housing Manager*, 1947, 1950
A.B., Birmingham-Southern; M.S., Auburn University.

MILLER, GEORGE N. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

* Temporary.

MOON, BENJAMIN W. — *Farm Manager, Large Animal Surgery and Medicine*, 1961

MOORE, ALICE J. — *Assistant Dietitian, Women's Dining Hall*, 1961

MOORE, CLARENCE TRUMAN — *Laboratory Mechanician, Mechanical Engineering*, 1962

MOORE, FRANKLIN D. — *Education Training Specialist, AF ROTC*, 1961
Staff Sergeant, USAF.

MORGAN, DOROTHY F. — *Assistant Dietitian, War Eagle Cafeteria*, 1962
B.S., Alabama College.

MULLINS, MARION DEWITT — *Assistant to Dean, School of Chemistry*, 1952, 1959
B.S., Auburn University.

MURPHY, RONNIE D. — *Graduate Counselor, Magnolia Dormitory*, 1962

NEISLER, HELEN R. — *Technical Editor, School of Engineering*, 1962
B.A., Auburn University.

NESMITH, WOODIE R. — *Construction Inspector, Buildings and Grounds*, 1961

NORTON, KATHLEEN D. — *Head Resident of Dormitory A, South Women's Dormitory*, 1962

OLDHAM, PEGGY SMITH — *Senior Clerk in University Personnel Office*, 1959, 1960
B.S., Memphis State University.

OWSLEY, DOROTHY — *Senior Auditing Clerk, Business Office*, 1961, 1962
B.A., Huntingdon College.

PEAK, BRUCE L. — *Transportation Foreman, Buildings and Grounds*, 1961

PEARSON, ANNE P. — *Chief Accountant, Business Office*, 1929, 1959

PETTY, JEAN GREENHILL — *Senior Secretary, School of Education*, 1955, 1959

PIERCE, JUDGE G. — *Maintenance Custodian, Forest Hills Apartments*, 1946, 1959

POLLARD, WILLIE E. — *Senior Clerk, University Bookstore*, 1960

POORE, WILLIAM D. — *Director, University Personnel Office*, 1957, 1961
B.S., M.A., University of Illinois.

POPE, LUTHER M. — *Storeroom Supervisor, Buildings and Grounds*, 1953, 1961

POWELL, CINDERELLA M. — *Supervisor of Women's Dormitories*, 1947

POWELL, WILLIAM FRANK — *Purchasing Agent, Business Office*, 1950
B.S., Auburn University.

PRATHER, MARY M. — *Assistant Dietitian, Alumni Cafeteria*, 1962
B.S., Auburn University.

PRYOR, CLYDE OLLIE — *Laboratory Mechanician, Textile Technology*, 1959, 1960

PUGH, WILBUR H. — *Property Custodian, Small Animal Surgery and Medicine*, 1955, 1958

PUTNAM, ROBERT F. — *Processing Mechanician, Textile Technology*, 1959

QUILLIN, JAMES R. — *Manager, Chemistry Supply Store*, 1948, 1959

QUINN, JOSEPH C. — *Artist, Learning Resources Center*, 1951, 1962
B.S., Auburn University.

RAGAN, DREW — *Activities Advisor, Office of Student Affairs*, 1960, 1962
B.S., Auburn University.

RAINEY, RUTH S. — *Senior Secretary, Pharmacy*, 1958, 1962

RAWLS, BYRON F. — *Executive Secretary, F.F.A.*, 1959
B.S., M.S., Auburn University.

RAY, LUTHER G., JR. — *Assistant Maintenance Custodian, Graves Centre Apartments*, 1960

REW, CHARLES F. — *Senior Clerk, Business Office*, 1948, 1959

ROANE, RICHARD ALLEN — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

ROBERTS, J. HOYT — *Counselor II, Vocational Rehabilitation*, 1959, 1962
B.S., M.S., Jacksonville State College.

RODEN, JEREMIAH, JR. — *Editor, The Auburn Alumnews*, 1955, 1957
B.S., M.A., Auburn University.

RODEN, REBECCA HARRIS — *Administrative Assistant, Graduate School*, 1956, 1962
B.S., Auburn University.

ROWLAND, WILMER R. — *Sergeant First Class, Military Science*, 1960

RUPP, CHARLES CHRISTOPHER — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

RUSH, KATHRYN S. — *Food Director, Dining Hall Service*, 1949, 1951
B.S., M.S., Auburn University.

SCARBROUGH, JOAN C. — *Senior Clerk, Field Services, School of Education*, 1958, 1961

SELLERS, LEWIS L. — *Assistant Supervisor of Vocational Agriculture*, 1937, 1958
B.S., M.S., Auburn University.

SELLERS, MARY F., R.N. — *Nurse, Infirmary*, 1944, 1959

SEWELL, ANNIE MARIE — *Head Resident of Teague Hall*, 1942
A.B., Huntingdon; M.S., Auburn University.

SHERLING, DOROTHY N. — *Senior Clerk, School of Science and Literature*, 1951, 1959
B.S., Auburn University.

SHIVERS, CHRISTEEN — *Laboratory Technician A, Pathology-Parasitology*, 1961
(Resigned effective February 28, 1963.)

SHUMAN, RALEIGH C. — *Senior Chief Quartermaster, Naval Science*, 1960

SIBLEY, GRIGSBY THOMAS, JR. — *Electronics Technician, Electrical Engineering*, 1943, 1961

SIBLEY, KATE MAXWELL — *Sr. Tabulating Machine Operator, Registrar's Office*, 1950, 1959

SILAVENT, EVIE — *Head Resident of Mell Hall*, 1958, 1962

SIMMONS, ELDRIDGE C., M.D. — *Assistant Director of Student Health*, 1960
B.S., M.D., University of Virginia.

SIMMS, GRACE F. — *Nurse, Infirmary*, 1944, 1959

SIMONS, KENNETH W. — *Accountant, Business Office*, 1958
B.A., Millsaps College.

SIMS, BENNETT — *Store Manager, University Bookstore*, 1946, 1947

SIMS, VIRGINIA V. — *Assistant Cashier, Business Office*, 1950

SIZEMORE, WILLIAM J. — *Assistant Plumbing and Heating Foreman, Buildings and Grounds*, 1961

SKINNER, HOWARD ODELL — *Program Manager, Educational TV*, 1959, 1962
B.S., University of Florida.

SMITH, CHARLES E. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1959, 1962
B.S.E.E., Auburn University.

SMITH, IVERSON T. — *Assistant Carpenter Foreman, Buildings and Grounds*, 1957

SMITH, STARNES L. — *Chief Gunners Mate, Naval Science*, 1962

SMYTH, HENRY A. — *Maintenance Mechanic, Buildings and Grounds*, 1959, 1960

SNEED, MARY LOUISE — *Bookkeeper, Business Office*, 1960, 1962

SNOW, MELVIN L. — *Janitor Foreman, Buildings and Grounds*, 1951, 1957

SPARROW, SYLVIA S. — *Senior Clerk, Engineering Administration*, 1946, 1956
B.S., Alabama College.

SPIKES, CLEO — *Evening Supervisor and Nurse, Infirmary*, 1961

STEWART, JON ANNIS — *Research Consultant, Computer Center*, 1961, 1962
B.S., Tulane; M.A., Indiana University.

STOVER, ANN — *Head Resident of Dowdell Hall and College Chaperone*, 1952, 1957

STRONG, HOWARD — *Assistant to Dean, Pre-Engineering*, 1947, 1960
B.S.E., M.S., Auburn University; Ed.D., Columbia University.

STRONG, ROBERT BRYANT — *Assistant Director, Student Financial Aid*, 1962
B.S., M.S., Auburn University.

SUBLETT, PEARL S. — *Dietitian, Magnolia Dining Hall*, 1961
B.S., Alabama College; M.S., Auburn University.

SUDDATH, BOYCE E. — *Senior Clerk, Office of the Dean, School of Education*, 1944, 1959

SUGG, ETHEL J. — *Head Resident of Dormitory C, South Women's Dormitories*, 1957, 1962
B.S., M.S., Auburn University.

SUGG, TOT — *Housemother, Magnolia Dormitories*, 1956, 1962

SUTHERLIN, DONALD W. — *Assistant in Electrical Engineering, Auburn Research Foundation*, 1962
B.S.E.E., Auburn University.

*SZILASSY, CLARA I. — *Writer in Learning Resources Center*, 1962
LL.D., University of Pecs (Hungary).

TAUNTON, THOMAS A. — *Tool Room Attendant, Industrial Laboratories*, 1961

* Temporary.

TAYLOR, EARLENE PANKEY—*Senior Payroll Clerk, Business Office*, 1961
B.B.A., Auburn University.

TAYLOR, EDWARD B.—*Assistant Director of Engineering Extension*, 1957, 1960
B.S., Davidson College; B.S.T.M., North Carolina State; M.S., Columbia University.

*TAYLOR, LAWRENCE B.—*Assistant in Engineering Graphics*, 1962
B.M.E., Auburn University.

TAYLOR, WILKA B.—*Senior Clerk, Buildings and Grounds*, 1952

THOMPSON, JOLENE—*Senior Secretary, President's Office*, 1960
B.S., Auburn University.

THURMOND, VERA—*Housemother, Magnolia Dormitories*, 1961

THURSTON, MILTON C.—*Supervisor, Supply Room and Laundry, Athletics*, 1946, 1950

TIPPINS, FRANCES E.—*Administrative Assistant, Business Office*, 1929, 1959

TUCKER, INEZ J.—*Dietitian, War Eagle Cafeteria*, 1952, 1955
B.S., Auburn University.

TURNIPSEED, LAMARGARET—*Head of Women's Housing*, 1947, 1952
B.A., Huntingdon; M.S., Auburn University.

VAN GILDER, SARAH E.—*Assistant Dietitian, War Eagle Cafeteria*, 1960
B.S., Auburn University.

WADE, JAMES DALLAS—*Assistant to Dean of Engineering*, 1941, 1946
B.S., Auburn University.

WALDROP, RUTH C.—*Assistant Purchasing Agent, Business Office*, 1928, 1937

WALTON, JOHN H.—*Carpenter Foreman, Buildings and Grounds*, 1947

WARE, ROBERT ELMORE—*Chief Engineer, Educational TV*, 1959
B.S., Auburn University.

WARNER, JOSEPHINE F.—*Counselor, Student Counseling Service*, 1962
B.S., Jacksonville State; M.S., Auburn University.

WEBSTER, MARGARET NUNN—*Dietitian, Women's Dining Hall*, 1960
B.S., Auburn University.

WEEKLEY, JOHN WITHERINGTON—*Laboratory Mechanician, Aerospace Engineering*, 1961

WEGENER, EDWARD PALMER—*Director, Educational TV*, 1954
B.S., University of Minnesota.

WHATLEY, MILDRED C.—*Senior Payroll Clerk, Business Office*, 1940, 1959

WHITE, J. HERBERT—*Field Secretary, Alumni Association*, 1960
B.S., Auburn University.

WHITE, JOSEPH A.—*Assistant Supervisor of Vocational Agriculture*, 1960
B.S., M.S., Auburn University.

WHITMAN, JESSIE C.—*Assistant Campus Foreman, Buildings and Grounds*, 1952, 1959

WHITMAN, J. M.—*Plumbing and Heating Foreman, Buildings and Grounds*, 1940, 1942

WILDER, ELIZABETH S.—*Head Resident of Lane Hall*, 1929, 1962

WILKERSON, FRANKIE L.—*Field Radio Repairman, Assistant Instructor, Army ROTC*, 1962
Specialist Five, USA.

WILKINSON, BESSIE R.—*Head Resident of Auburn Hall*, 1962

WILLIAMS, L. B.—*Editor, University Publications, University Relations*, 1956, 1962
B.S., Troy State College; M.S., George Peabody College.

WILSON, JACK O.—*Campus Foreman, Buildings and Grounds*, 1947, 1953

WILSON, VERNA M.—*Head Resident of Alumni Hall*, 1960

WINGATE, HENRY T.—*Assistant to the Dean, Veterinary Medicine Administration*, 1927, 1959
B.S., Auburn University.

WOODS, MARGARET, R.N.—*Nurse, Infirmary*, 1953, 1959

WRIGHT, CARY DUNCAN—*Property Custodian, Large Animal Surgery and Medicine*, 1948, 1956

WRIGHT, LUNEAL D., R.N.—*Superintendent of Nurses, Infirmary*, 1941, 1950

YOUNG, JOE FRANK—*Laboratory Mechanician, Mechanical Engineering*, 1960

ZARING, MARGARET K.—*Head Resident of Keller Hall*, 1958
B.S., Northwestern.

ZIEGLER, EVELYN A.—*Senior Clerk, School of Science and Literature*, 1956, 1959

* Temporary.

AGRICULTURAL EXPERIMENT STATION STAFF[1]

RALPH BROWN DRAUGHON, LL.D., *President*
ROBERT C. ANDERSON, Ph.D., *Executive Vice-President*
E. V. SMITH, Ph.D., *Director*
COYT WILSON, Ph.D., *Associate Director*
C. F. SIMMONS, Ph.D., *Assistant Director*
W. H. WEIDENBACH, B.S., *Assistant to Director*

Agricultural Economics

LANHAM, BEN T., JR. — *Head, Agricultural Economics*, 1939, 1956
B.S., Clemson; M.S., Tennessee; Ph.D., Michigan State University.

BLACKSTONE, J. H. — *Agricultural Economist*, 1938, 1953
B.S., M.S., Auburn University.

DANNER, M. J. — *Agricultural Economist*, 1943, 1957
B.S., Texas Tech; M.S., Tennessee.

STRICKLAND, P. L., JR. — *Agricultural Economist (Coop. USDA)*, 1962
B.S., North Carolina State College; M.S., Ph.D., Oklahoma State.

WHITE, MORRIS — *Agricultural Economist*, 1950, 1960
B.S., Auburn University; M.S., Ph.D., Purdue.

YEAGER, J. H. — *Agricultural Economist*, 1946, 1957
B.S., M.S., Auburn University; Ph.D., Purdue.

CHASTAIN, E. D., JR. — *Associate Agricultural Economist*, 1956
B.S., Clemson; M.S., Cornell; Ph.D., Purdue.

°°KERN, E. E., JR. — *Associate Agricultural Economist*, 1955
B.S., M.S., Louisiana State University.

PARTENHEIMER, E. J. — *Associate Agricultural Economist*, 1958
B.S., M.S., Purdue; Ph.D., Michigan State.

DUNKELBERGER, J. E. — *Assistant Rural Sociologist*, 1962
A.B., Franklin and Marshall College; M.S., Pennsylvania State University.

WILSON, LOWELL E. — *Assistant Agricultural Economist*, 1960
B.S., Murray State College; M.S., Kentucky; Ph.D., Illinois.

°HAMMETT, RUTH A. — *Assistant in Agricultural Economics*, 1955
B.S., M.S., Auburn University.

°MCMANUS, BENNY R. — *Assistant in Agricultural Economics*, 1960
B.S., Auburn University.

Agricultural Engineering

KUMMER, F. A. — *Head, Agricultural Engineering (P.E.)*, 1935, 1948
B.S., M.S., Auburn University.

COOPER, A. W. — *Director, National Tillage Machinery Laboratory, (P.E.) (Coop. USDA)*, 1939, 1958
B.S., M.S., Auburn University; Ph.D., Michigan State.

CORLEY, T. E. — *Associate Agricultural Engineer (P.E.)*, 1946, 1953
B.S., M.S., Auburn University.

DUMAS, W. T. — *Associate Agricultural Engineer (P.E.)*, 1946, 1962
B.S., M.S., Auburn University.

GRUB, WALTER — *Associate Agricultural Engineer*, 1954
B.S., Rutgers University; M.S., Cornell.

RENOLL, E. S. — *Associate Agricultural Engineer (P.E.)*, 1949, 1958
B.S., Auburn University; M.S., Iowa State.

ROLLO, C. A. — *Associate Agricultural Engineer (P.E.)*, 1947, 1956
B.S., M.S., Auburn University.

STOKES, C. M. — *Associate Agricultural Engineer (P.E.)*, 1937, 1947
B.S., M.S., Auburn University.

GILL, W. R. — *Soil Scientist (Coop. USDA)*, 1955
B.S., Pennsylvania State; M.S., University of Hawaii; Ph.D., Cornell.

MCCREERY, W. F. — *Agricultural Engineer (Coop. USDA)*, 1950, 1952
B.S., Georgia; M.S., Auburn University.

REAVES, C. A. — *Agricultural Engineer (Coop. USDA) (P.E.)*, 1951
B.S., Auburn University; M.S., University of Missouri.

[1] As of December 1, 1962.
° Temporary.
°° On leave.

REED, I. F. — *Agricultural Engineer (Coop. USDA) (P.E.)*, 1933, 1944
B.S., A.E., Nebraska; M.S., Ohio State.

TAYLOR, J. H. — *Agricultural Engineer (Coop. USDA)*, 1962
B.S., Mississippi State University.

VANDEN BERG, G. E. — *Agricultural Engineer (Coop. USDA)*, 1958
B.S., South Dakota State College; M.S., Ph.D., Michigan State University.

HENDRICK, J. G. — *Assistant Agricultural Engineer*, 1962
B.S., M.S., Auburn University.

EAGAR, T. N. — *Assistant in Agricultural Engineering*, 1959
B.S., Auburn University.

SMITH, D. M. — *Agricultural Engineering Field Superintendent*, 1962
B.S., Auburn University.

Agricultural Library

CANTRELL, C. H. — *Director of Libraries*[1], 1944
A.B., A.B.L.S., M.S., North Carolina; Ph.D., University of Illinois.

SZILASSY, SANDOR — *Agricultural Librarian*[1], 1961
LL.D., University of Budapest; M.A.L.S., University of Indiana.

Agronomy and Soils

ROGERS, HOWARD T. — *Head, Agronomy and Soils*, 1942, 1951
B.S., Virginia Polytechnic Institute; M.S., Michigan State; Ph.D., Iowa State.

COPE, J. T., JR. — *Agronomist*, 1950, 1959
B.S., M.S., Auburn University; Ph.D., Cornell.

DONNELLY, E. D. — *Plant Breeder*, 1951, 1959
B.S., M.S., Auburn University; Ph.D., Cornell.

ENSMINGER, L. E. — *Soil Chemist*, 1944, 1953
B.S., Missouri; Ph.D., Illinois.

MCCAIN, F. S. — *Plant Breeder*, 1946, 1959
B.S., M.S., Auburn University; Ph.D., Purdue.

MINTON, EARL B. — *Plant Pathologist (Coop. USDA)*, 1950, 1956
B.S., M.S., Auburn University.

PEARSON, R. W. — *Soil Chemist (Coop. USDA)*, 1941, 1960
B.S., M.S., Mississippi State; Ph.D., Wisconsin.

ROUSE, R. D. — *Soil Chemist*, 1949, 1956
B.S., M.S., Georgia; Ph.D., Purdue.

SCARSBROOK, C. E. — *Soil Chemist*, 1953, 1959
B.S., Auburn University; Ph.D., North Carolina State.

SMITH, A. L. — *Pathologist (Coop. USDA)*, 1946
B.S., Oklahoma A. & M.; M.S., University of Arkansas; Ph.D., University of Wisconsin.

STURKIE, D. G. — *Agronomist*, 1925, 1942
B.S., Auburn University; M.S., Iowa State; Ph.D., Michigan State.

WEAR, J. I. — *Soil Chemist*, 1939, 1959
B.S., M.S., Auburn University; Ph.D., Purdue.

ADAMS, FRED — *Associate Soil Chemist*, 1955
B.S., M.S., Louisiana State University; Ph.D., California.

DIXON, JOE B. — *Associate Soil Mineralogist*, 1959, 1962
B.S., M.S., Kentucky; Ph.D., Wisconsin.

EVANS, E. M. — *Associate Agronomist*, 1949, 1953
B.S., Auburn University; M.S., Cornell.

HILTBOLD, A. E. — *Associate Soil Microbiologist*, 1955
B.S., Cornell; M.S., Iowa State; Ph.D., Cornell.

HOVELAND, CARL S. — *Associate Agronomist*, 1959
B.S., M.S., Wisconsin; Ph.D., Florida.

JOHNSON, WILEY C., JR. — *Associate Plant Breeder*, 1957
B.S., Wake Forest; B.S., M.S., North Carolina State; Ph.D., Cornell.

MIXON, AUBREY C. — *Associate Agronomist (Coop. USDA)*, 1957
B.S., University of Georgia; M.S., North Carolina State College.

PATTERSON, R. M. — *Associate Agronomist*, 1949, 1956
B.S., M.S., Florida; Ph.D., Pennsylvania State.

EVANS, C. E. — *Assistant Agronomist*, 1955, 1957
B.S., Abilene Christian College; M.S., Auburn University.

KING, C. C., JR. — *Assistant Agronomist*, 1952, 1954
B.S., M.S., Auburn University.

[1] Joint employees with Teaching Division of Auburn University.

SEARCY, V. S. — *Assistant Agronomist*, 1948, 1950
B.S., M.S., Auburn University.

SHARMAN, G. T., JR. — *Assistant Agronomist (Thorsby)*, 1952, 1954
B.S., Auburn University.

BERTRAM, F. E. — *Field Superintendent (Prattville)*, 1935, 1948
B.S., Auburn University.

GLAZE, FRED T. — *Field Superintendent (Alexandria)*, 1954
B.S., Auburn University.

LANGFORD, J. W. — *Superintendent Plant Breeding Unit (Tallassee)*, 1954
B.S., Auburn University.

RICHARDSON, J. W. — *Field Superintendent (Brewton)*, 1937, 1948
B.S., Auburn University.

ANDREWS, O. N., JR. — *Assistant in Agronomy*, 1960
B.S., Auburn University.

CHAPMAN, LOUIE J. — *Assistant in Agronomy*, 1954
B.S., M.S., Auburn University.

JORDAN, C. W. — *Assistant in Agronomy*, 1961
B.S., Louisiana State University.

SHEPHERD, RAYMOND L. — *Assistant in Agronomy*, 1960
B.S., Ouachita College; M.S., University of Arkansas.

WEBSTER, H. L. — *Assistant in Agronomy*, 1961
B.S., Auburn University.

Animal Disease Research

GREENE, J. E. — *Head, Animal Disease Research*[3], 1937, 1958
D.V.M., M.S., Auburn University.

CLARK, CARL — *Associate Head, Animal Disease Research*[3], 1953, 1959
B.S., D.V.M., Washington State; M.Sc., Ph.D., Ohio State.

DACRES, WILLIAM G. — *Bacteriologist*, 1956
A.B., M.S., Tennessee; Ph.D., Rice Institute.

KIESEL, GEORGE K. — *Animal Pathologist*, 1952, 1955
B.S., Rutgers University; D.V.M., New York State Veterinary College.

ROBERTS, CHARLES S. — *Animal Pathologist*[4], 1947, 1954
D.V.M., Auburn University; M.S., Michigan State.

FARNELL, DANIEL R. — *Associate Animal Pathologist*, 1962
D.V.M., M.S., Auburn University.

ALEXANDER, HERMAN D. — *Assistant Animal Pathologist*[3], 1950, 1959
B.S., M.S., Ph.D., Auburn University.

Animal Science

WARREN, W. M. — *Head, Animal Science*, 1955, 1957
B.S., Michigan State; M.S., Texas A. & M.; Ph.D., Missouri.

ANTHONY, W. B. — *Animal Nutritionist*, 1953, 1955
B.S., Illinois; M.S., Texas A. & M.; Ph.D., Cornell.

PRICKETT, C. O. — *Animal Pathologist*, 1962
B.S., University of New Hampshire; D.V.M., Auburn University.

SALMON, W. D. — *Animal Nutritionist*, 1922, 1957
B.S., Kentucky; M.S., Missouri; Sc.D., Kentucky.

PATTERSON, TROY B. — *Associate Animal Breeder*, 1957
B.S., Mississippi State; M.S., Ph.D., Texas A. & M.

SQUIERS, C. D. — *Associate Animal Breeder*, 1950
B.S., M.A., Ph.D., Missouri.

STRENGTH, D. R. — *Associate Animal Nutritionist*, 1961
B.S., M.S., Auburn University; Ph.D., Cornell.

TUCKER, H. F. — *Associate Animal Nutritionist*, 1949, 1962
B.S., M.S., Ph.D., Auburn University.

TURNEY, D. M. — *Associate Animal Husbandman*, 1940, 1962
B.S., Auburn University; M.S., Illinois.

WIGGINS, E. L. — *Associate Animal Breeder*, 1956
B.S., M.S., Oklahoma A. & M.; Ph.D., Wisconsin.

HARRIS, RALPH R. — *Assistant Animal Nutritionist*, 1960, 1961
B.S., M.S., Auburn University; Ph.D., Texas A. & M.

[3] Joint employees with School of Veterinary Medicine.
[4] Joint employees with State Department of Agriculture and Industries.

MEADOWS, G. B. — *Assistant Animal Husbandman*, 1951
B.S., Auburn University; M.S., University of Florida.

PRICE, JAMES F. — *Assistant Animal Scientist*, 1960, 1962
B.S., University of Tennessee; M.S., Ph.D., Michigan State University.

SMITH, R. C. — *Assistant Animal Nutritionist*, 1961
B.S., Elmhurst College; M.S., Ph.D., University of Illinois College of Medicine.

NIX, R. R. — *Assistant in Animal Science*, 1961
B.S., Auburn University.

Botany and Plant Pathology

LYLE, J. A. — *Head, Botany and Plant Pathology*, 1947, 1954
B.S., Kentucky; M.S., North Carolina State; Ph.D., Minnesota.

CAIRNS, E. J. — *Nematologist*, 1954
B.A., M.A., California (Los Angeles); Ph.D., Maryland.

DAVIS, D. E. — *Botanist*, 1947, 1955
B.Ed., Ped.D., Eastern Illinois University; M.S., Ph.D., Ohio State.

MINTON, N. A. — *Nematologist (Coop. USDA)*, 1951, 1955
B.S., M.S., Ph.D., Auburn University.

CLARK, E. M. — *Associate Botanist*, 1956, 1960
B.S., M.S., Ph.D., Minnesota.

CURL, E. A. — *Associate Plant Pathologist*, 1954, 1957
B.S., Louisiana Polytechnic Institute; M.S., Arkansas; Ph.D., Illinois.

DIENER, U. L. — *Associate Plant Pathologist*, 1952, 1957
B.A., Miami University (Oxford, Ohio); M.A., Harvard; Ph.D., North Carolina State.

DAVIS, NORMAN D. — *Associate Botanist*, 1958, 1961
B.S., Georgia; M.S., Ph.D., Ohio State.

FUNDERBURK, H. H., JR. — *Assistant Botanist*, 1961
B.S., M.S., Auburn University; Ph.D., Louisiana State University.

GUDAUSKAS, ROBERT T. — *Assistant Plant Pathologist*, 1960
B.S., East Illinois State College; M.S., Ph.D., University of Illinois.

*NEGI, N. S. — *Assistant in Botany*, 1962
B.S., Government Agricultural College, Kanpur, India; M.S., Banaras Hindu University, Banaras, India; Ph.D., Louisiana State University.

ROBERTS, DONALD R. — *Assistant in Botany*, 1960
B.S., M.S., University of Tennessee.

Dairy Science

AUTREY, K. M. — *Head, Dairy Science*, 1947
B.S., Louisiana State; M.S., Ph.D., Iowa State.

CANNON, R. Y. — *Dairy Technologist*, 1948, 1960
B.S., Iowa State; M.S., Ohio State; Ph.D., Wisconsin.

HAWKINS, G. E., JR. — *Dairy Husbandman*, 1952, 1959
B.S., Western Kentucky College; M.S., University of Georgia; Ph.D., North Carolina State College.

ROLLINS, G. H. — *Associate Dairy Husbandman*, 1948, 1955
B.S., M.S., Virginia Polytechnic Institute; Ph.D., Illinois.

LITTLE, JOE ALLEN — *Assistant in Dairy Husbandry*, 1959, 1962
B.S., Western Kentucky State College.

PAAR, GARY E. — *Assistant in Dairy Husbandry*, 1960
B.S., Wisconsin State College; M.S., Iowa State University.

Forestry

DEVALL, WILBUR B. — *Head, Forestry*, 1946, 1951
B.S., Syracuse; M.S., Florida.

GARIN, G. I. — *Forester*, 1948, 1952
B.S., M.S., University of Idaho; Ph.D., Yale.

HODGKINS, E. J. — *Forester*, 1952, 1957
B.S., Michigan State; M.S., California; Ph.D., Michigan State.

RICHARDS, D. B. — *Forester*, 1951
B.S., Colorado A. & M.; M.S., Ph.D., Syracuse.

GOGGANS, J. F. — *Associate Forester*, 1947, 1952
B.S., University of Georgia; M.F., Duke; Ph.D., North Carolina State College.

* Temporary.

JOHNSON, E. W. — *Associate Forester*, 1950, 1957
B.S., New Hampshire; M.F., Yale; Ph.D., Syracuse.

POSEY, H. C. — *Associate Forester*, 1950, 1959
B.S.F., M.S.F., North Carolina State.

**WHIPPLE, S. D. — *Associate Forester (Rt. 2, Fayette)*, 1958
B.S., M.F., University of Michigan.

BEALS, HAROLD O. — *Assistant Forester*, 1960
B.S.F., M.S., Ph.D., Purdue.

CARTER, MASON C. — *Assistant Forester*, 1960
B.S., M.S., Virginia Polytechnic Institute; D.F., Duke.

DEBRUNNER, L. E. — *Assistant Forester*, 1961
B.S., University of Cincinnati; M.F., Yale.

LIVINGSTON, K. W. — *Assistant Forester*, 1948, 1949
B.S., University of South Carolina; M.F., Duke.

LYLE, E. S., JR. — *Assistant Forester*, 1957
B.S., University of Georgia; M.F., Duke.

STEENSEN, D. H. J. — *Assistant Forester*, 1960
B.S., Iowa State; M.F., Duke.

RICHEY, C. M. — *Assistant in Forestry*, 1962
B.S., Colorado State University.

SMITH, D. E. — *Assistant in Forestry (Rt. 2, Fayette)*, 1961, 1962
B.S., Auburn University; M.S., North Carolina State College.

Home Economics

SPIDLE, MARION W. — *Head, Home Economics Research*[5], 1938, 1955
B.S., Alabama College; B.S., M.A., Columbia University.

PHILSON, KATHRYN — *Home Economist*, 1953, 1957
A.B., M.S., Ohio University; Ph.D., Iowa State College.

VAN DE MARK, MILDRED S. — *Associate Home Economist*[5], 1938, 1955
B.S., Auburn University; M.A., Columbia University.

MORTON, SUE B. — *Assistant Home Economist*[5], 1962
B.S., M.S., Ph.D., Texas Woman's University.

PRATHER, MARY E. — *Assistant Home Economist*[5], 1952, 1960
B.S., M.S., Auburn University; Ph.D., Iowa State University.

Horticulture

WARE, L. M. — *Head, Horticulture*, 1923, 1931
B.S., M.S., Auburn University.

FURUTA, TOKUJI — *Ornamental Horticulturist*, 1951, 1962
B.S., M.S., Ph.D., Ohio State.

GREENLEAF, W. H. — *Vegetable Breeder*, 1947
B.S., Ph.D., University of California at Berkeley.

ORR, HENRY P. — *Ornamental Horticulturist*, 1947, 1962
B.S., Auburn University; M.S., Ph.D., Ohio State.

AMLING, HARRY J. — *Associate Horticulturist*, 1958
B.S., Rutgers; M.S., Delaware; Ph.D., Michigan State.

HARRIS, HUBERT — *Associate Horticulturist*, 1936, 1948
B.S., M.S., Auburn University.

JONES, SAM T. — *Associate Horticulturist*, 1950, 1954
B.S., M.S., Auburn University; Ph.D., Louisiana State.

JOHNSON, W. A. — *Assistant Horticulturist*, 1937, 1950
B.S., M.S., Auburn University.

NORTON, JOSEPH D. — *Assistant Horticulturist*, 1960
B.S., M.S., Auburn University.; Ph.D., Louisiana State.

MARTIN, W. C., JR. — *Greenhouse Manager*, 1951, 1958
B.S., Auburn University.

PERRY, FREDERICK B., JR. — *Assistant in Horticulture*, 1957
B.S., M.S., Auburn University.

TURNER, JACK L. — *Assistant in Horticulture*, 1955, 1959
B.S., M.S., Auburn University.

** On leave.
[5] Joint employees with School of Home Economics.

Poultry Science

MOORE, CLAUDE H. *Head, Poultry Science*, 1956, 1959
B.S., Auburn University; M.S., Kansas State; Ph.D., Purdue.

COTTIER, G. J. *Poultry Husbandman*, 1930, 1949
B.S., Auburn University; M.S., University of Missouri; D.V.M., Auburn University.

EDGAR, S. A. *Poultry Pathologist*, 1947, 1950
A.B., Sterling; M.S., Kansas State; Ph.D., Wisconsin.

KING, DALE F. *Poultry Husbandman*, 1930, 1959
B.S., Oregon State; M.S., Kansas State.

GOODMAN, J. G. *Associate Poultry Husbandman*, 1939, 1946
B.S., M.S., Auburn University.

JOHNSON, L. W. *Associate Poultry Husbandman*, 1948, 1955
A.B., Cornell; M.S., Auburn University; Ph.D., Texas A. & M.

MORA, E. C. *Associate Poultry Pathologist*, 1958, 1961
B.S., University of New Mexico; M.S., New Mexico State; Ph.D., Kansas State College.

HOWES, JAMES R. *Assistant Poultry Husbandman*, 1960
B.S.C., University, London; N.D.A., University, Edinburgh; M.S.C., McGill University, Montreal.

Publications

CRAWFORD, E. M. *Director, University Relations*, 1962
B.S., Auburn University.

ROY, K. B. *Head, Publications*, 1943, 1948
B.J., University of Missouri.

MCGRAW, E. L. *Associate Agricultural Editor*, 1941, 1957
B.S., M.S., Auburn University.

STEVENSON, R. E. *Associate Agricultural Editor*, 1955, 1960
B.S., Auburn University.

Research Data Analysis

ALVORD, B. F. *Statistician*, 1929, 1957
B.S., M.S., University of Illinois.

DRAKE, A. E. *Associate Biometrician*, 1959
B.S., M.S., Kentucky; Ph.D., Illinois.

Zoology-Entomology

ARANT, F. S. *Head, Zoology-Entomology*, 1926, 1949
B.S., M.S., Auburn University; Ph.D., Iowa State.

BAKER, M. F. *Leader, Wildlife Research Unit (Coop. USDI)*, 1958
B.S., M.S., Iowa State College; Ph.D., University of Kansas.

DENDY, J. S. *Zoologist*, 1947, 1957
B.S., Presbyterian; M.A., North Carolina; Ph.D., Michigan State.

EDEN, W. G. *Entomologist*, 1940, 1953
B.S., M.S., Auburn University; Ph.D., Illinois.

SWINGLE, H. S. *Fish Culturist*, 1929, 1939
B.S., M.S., Sc.D., Ohio State.

ARTHUR, B. WAYNE *Associate Entomologist*, 1951, 1959
B.S., M.A., Auburn University; Ph.D., Wisconsin.

BLAKE, G. H., JR. *Associate Entomologist*, 1947, 1956
B.S., M.S., Auburn University; Ph.D., Illinois.

HAYS, KIRBY LEE *Associate Entomologist*, 1957, 1960
B.S., M.S., Auburn University; Ph.D., Michigan.

HYCHE, LACY L. *Associate Entomologist*, 1952, 1960
B.S., M.S., Auburn University.

IVEY, W. D. *Associate Zoologist*, 1947, 1962
B.S., M.S., Auburn University; Ph.D., Emory University.

LAWRENCE, J. M. *Associate Fish Culturist*, 1941, 1950
B.S., M.A., Auburn University; Ph.D., Iowa State.

PRATHER, E. E. *Associate Fish Culturist*, 1941, 1950
B.S., Auburn University; M.S., Michigan State.

ALLISON, RAY *Assistant Zoologist*, 1950, 1958
B.S., Western Carolina Teachers College; M.S., North Carolina State College; Ph.D., Louisiana State University.

SHELL, E. WAYNE *Assistant Fish Culturist*, 1952, 1959
B.S., M.S., Auburn University; Ph.D., Cornell.

SPEAKE, DAN W. ..... *Assistant Leader, Wildlife Research Unit (Coop. USDI)*, 1955
B.S., M.S., Auburn University.

WATSON, THEO F. ..... *Assistant Entomologist*, 1962
B.S., M.S., University of Arkansas; Ph.D., University of California at Berkeley.

BASS, MAX H. ..... *Assistant in Entomology*, 1957, 1960
B.S., Troy State College; M.S., Auburn University.

BEASLEY, P. G. ..... *Assistant in Fish Culture*, 1960
B.S., Washington University at St. Louis; M.S., Auburn University.

SMITHERMAN, R. O. ..... *Assistant in Fish Culture*, 1961
B.S., Auburn Universtiy; M.S., North Carolina State College.

OLSEN, PETER F. ..... *Assistant in Zoology*, 1961
B.S., M.S., University of Michigan.

SUBSTATIONS

Black Belt—Marion Junction, Dallas County

SMITH, L. A. ..... *Superintendent*, 1951, 1957
B.S., Auburn University.

GRIMES, HAROLD W., JR. ..... *Assistant Superintendent*, 1955, 1957
B.S., M.S., Auburn University.

Chilton Area Horticulture—Clanton, Chilton County

CARLTON, C. C. ..... *Superintendent*, 1948
B.S., Auburn University.

SHORT, KENNETH C. ..... *Assistant Superintendent*, 1960
B.S., Auburn University.

Gulf Coast—Fairhope, Baldwin County

YATES, HAROLD F. ..... *Superintendent*, 1931, 1959
B.S., Auburn University.

BARRETT, J. E., JR. ..... *Assistant Superintendent*, 1948
B.S., Auburn University.

Lower Coastal Plain—Camden, Wilcox County

BROWN, V. L. ..... *Superintendent*, 1949
B.S., Mississippi State University.

GAY, J. M. ..... *Assistant Superintendent*, 1962
B.S., West Virginia University; M.S., University of Kentucky.

WATSON, W. J. ..... *Assistant Superintendent*, 1958
B.S., Auburn University.

North Alabama Horticulture—Cullman, Cullman County

HOLLINGSWORTH, M. H. ..... *Superintendent*, 1958, 1962
B.S., Auburn University.

Piedmont—Camp Hill, Tallapoosa County

MAYTON, E. L. ..... *Superintendent*, 1929, 1945
B.S., Auburn University; M.S., University of Vermont.

SANDY, J. M. ..... *Assistant Superintendent*, 1961
B.S., Auburn University.

Sand Mountain—Crossville, DeKalb County

GISSENDANNER, S. E. ..... *Superintendent*, 1941, 1946
B.S., Auburn University.

LESTER, HOWARD C. ..... *Assistant Superintendent*, 1958
B.S., Auburn University.

Tennessee Valley—Belle Mina, Limestone County

BOSECK, J. K. ..... *Superintendent*, 1937, 1954
B.S., Auburn University.

IVEY, H. W., II ..... *Assistant Superintendent*, 1960
B.S., Auburn University.

Upper Coastal Plain—Winfield, Fayette County

COTNEY, W. W. ..... *Superintendent*, 1944
B.S., Auburn University.

MOORE, ROBERT A., JR. — *Assistant Superintendent*, 1959
B.S., Auburn University.

Wiregrass—Headland, Henry County

BROGDEN, C. A. — *Superintendent*, 1937, 1950
B.S., Auburn University.

SCONYERS, MAX C. — *Assistant Superintendent*, 1950
B.S., Auburn University.

STARLING, J. G. — *Assistant Superintendent*, 1948
B.S., Auburn University.

Ornamental Horticulture Field Station—Spring Hill, Mobile County

SELF, R. L. — *Plant Pathologist*, 1942, 1952
B.S., M.S., Auburn University; Ph.D., University of Wisconsin.

GRADUATE ASSISTANTS

BELL, OLIVER E. — *Animal Science*, 1961, 1962
B.S., M.S., Auburn University.

CANERDAY, THOMAS D. — *Zoology-Entomology*, 1961
B.S., Auburn University.

DAVIS, ELIZABETH Y. — *Animal Science*, 1959, 1961
B.S., Colorado A. & M.; M.S., Auburn University.

GIBBS, JAMES A. — *Agronomy and Soils*, 1960
B.S., M.S., University of Georgia.

HILL, EDWARD P., III — *Zoology-Entomology*, 1962
B.S., Oregon State University.

MOTSINGER, RALPH E. — *Botany and Plant Pathology*, 1961, 1962
B.S., North Carolina State College; M.S., University of Maryland.

SHOEMAKER, JON P. — *Zoology-Entomology*, 1961
B.S., M.A., Western Michigan University.

SIKKA, HARISH C. — *Botany and Plant Pathology*, 1961

OTHER STAFF

ADKINS, W. P. — *Shop Foreman,, Agricultural Engineering*, 1947

BLACK, A. L. — *Ponds Foreman, Zoology-Entomology*, 1948

BRADLEY, GLENDA G. — *Laboratory Tech. A, Animal Science*, 1962
B.S., Auburn University.

COLLUM, DOVARD R. — *Field Plot Aide, Agronomy and Soils*, 1957

CROW, PAUL ELMER — *Tech. Assistant, Animal Science*, 1961
B.S., Auburn University.

CUNNINGHAM, JOHN P. — *Farm Foreman, Dairy Science*, 1958, 1959
B.S., Auburn University.

DIXON, GWENDOLYN FAYE — *Lab. Tech. A, Home Econ. Research*, 1962

DOLAR, MARY RUTH — *Lab. Tech. A, Home Econ. Research*, 1959
B.S., Memphis State University.

DUCK, BARBARA ANN — *Lab. Tech. A, Animal Science*, 1962
B.S., University of Tennessee.

DUMAS, PATRICIA TALLEY — *Lab. Tech. A, Animal Science*, 1962
R.N., Duke University School of Nursing.

ELLINGTON, CLAUDE S. — *Asst. Ponds Foreman, Zoology-Entomology*, 1962

ELLIS, JANICE J. — *Lab. Tech. A, Agronomy and Soils*, 1957, 1959

ELLIS, MATTIE NORMAN — *Senior Secretary, Administration*, 1935, 1959

FINCHER, STALEY E. — *Farm Foreman, Poultry Science*, 1959
B.S., Auburn University.

FLANAGAN, CORNELIA S. — *Senior Lab. Tech., Poultry Science*, 1942, 1961

FOURROUX, SYLVESTER — *Lab. Tech. A, Ornamental Horticulture Field Station, Mobile*, 1962

GREEN, ANNELISE M. — *Lab. Tech. A, Animal Science*, 1962

GREGG, HELEN LEE — *Lab. Tech. A, Botany and Plant Pathology*, 1961
R.N., St. Vincent's School of Nursing.

GRITZ, INEZ B. — *Lab. Tech. A, Home Econ. Research*, 1957, 1961
B.A., Auburn University.

GUTHRIE, LARRY D. — *Technical Assistant, Dairy Science,* 1961, 1962
B.S., McNeese State College (Lake Charles, Louisiana).

HEARN, WILLIAM H. — *Stat. Assistant, Substations,* 1950, 1962
B.S., Auburn University.

HOLBROOK, CLAUDE W. — *Production Manager (Foundation Seed Stocks Farm at Thorsby) Agronomy and Soils,* 1960

HORNE, ELEANOR — *Senior Clerk, Agronomy and Soils,* 1922, 1959

HOWELL, BENJAMIN T. — *Laboratory Tech. A, Animal Science,* 1962

HUNTER, ROBERT C. — *Laboratory Tech. A, Zoology-Entomology,* 1960
B.S., Auburn University.

JOHNSON, SARAH S. — *Laboratory Tech. A, Dairy Science,* 1961
B.S., Mississippi State College for Women.

JONES, JACKIE M. — *Laboratory Tech. A, Poultry Science,* 1962

JONES, LESLIE J. — *Farm Foreman, Agronomy and Soils,* 1959

LANCASTER, MAYO — *Assistant Foreman, Dairy Science,* 1952, 1957

LANE, H. M. — *Farm Foreman, Horticulture,* 1921, 1946

MANSFIELD, E. E. — *Chief Clerk, Agriculture Economics,* 1939, 1959

MATHISON, M. C. — *Farm Foreman, Dairy Science,* 1942, 1957

NORTHCUTT, DEWEY V. — *Herdsman, Animal Science,* 1962

ODOR, EDWIN M. — *Laboratory Tech. A, Dairy Science,* 1962

ROBERTS, ANNETTE C. — *Laboratory Tech. A, Botany and Plant Pathology,* 1961
B.S., Auburn University.

SEIBOLD, CLARA T. — *Laboratory Tech. A, Poultry Science,* 1957, 1962
B.A., Swarthmore College.

SHERER, JO — *Laboratory Tech. A, Animal Science,* 1962
A.B., Birmingham Southern; M.T., University Hospital School of Medical Technology.

STAGGERS, EVELYN JUNE — *Laboratory Tech. A, Animal Science,* 1962
B.S., Auburn University.

TOMLIN, JUDY G. — *Laboratory Tech. A, Animal Science,* 1962
B.S., Auburn University.

TUCKER, SANDRA L. — *Laboratory Tech. A, Animal Science,* 1960
M.T., St. Vincent's School of Medical Technology.

WALLER, JAMES C. — *Greenhouse Attendant, Agronomy and Soils,* 1959

WANN, JORETTA B. — *Laboratory Tech. A, Dairy Science,* 1961

WILLIAMS, NANCY K. — *Laboratory Tech. A, Botany and Plant Pathology,* 1958, 1961
B.S., Auburn University.

WOODRUFF, RICHARD LEE — *Laboratory Tech. A, Animal Science,* 1962

AGRICULTURAL EXTENSION SERVICE STAFF

RALPH BROWN DRAUGHON, B.S., M.S., LL.D.
President
ROBERT ANDERSON, B.S., M.A., Ph.D.
Executive Vice-President

Fred R. Robertson, Jr., B.S., M.S., Tennessee; DPA Harvard——Director, 1959, 1962
Ralph R. Jones, B.S., Auburn University; M.S., Michigan State——Associate Director, 1936, 1962
R. M. Reaves, B.S., Auburn University——Assistant to the Director, Field Service, 1927, 1962
W. H. Taylor, B.S., Auburn University; M.S., Cornell——Assistant to the Director, Rural Resource Development, 1946, 1962
Hoyt M. Warren, B.S., Auburn University; M.S., Ed.D., Cornell——Assistant to the Director, Programs, 1945, 1961
Mrs. Mary E. Coleman, B.S., Auburn University; M.S., Columbia——State Home Demonstration Agent, 1936, 1958
H. Earle Williams, A.B., Birmingham-Southern——Head, Management Service, 1945, 1960
Edwin M. Crawford, B.S., Auburn University——Director of University Relations, 1962

SUPERVISORS

John C. Bullington, B.S., Auburn University——District Agent, 1939, 1962
S. L. Davis, B.S., Auburn University; M.S., Cornell——District Agent, 1942, 1961
T. W. Lumpkin, B.S., Auburn University——District Agent, 1934, 1941
Geo. D. H. McMillan, B.S., Auburn University——District Agent, 1942, 1961
Mary Hulsey, B.S., Auburn University; M.S., Columbia——District Home Dem. Agent, 1941, 1958
Eunice Ivey, B.S., Alabama College; M.S., Alabama——District Home Dem. Agent, 1949, 1957
Lucile Mallette, B.S., Auburn University; M.S., Minnesota——District Home Dem. Agent, 1936, 1941
Mrs. Patty Parkman, B.S., Alabama College——District Home Demonstration Agent, 1947, 1952

DIVISION CHAIRMEN

John Warren Gossett, B.S., Tennessee; M.S., Ph.D., Texas A. & M.——Chairman Animal Science Division, 1962
Thomas Benjamin Hagler, B.S., M.S., Auburn University; Ph.D., University of Maryland——Chairman, Plant Science Division, 1960

SPECIALISTS

O. N. Andrews, B.S., M.S., Auburn University——Agronomist, 1942, 1955
John Bagby, B.S., V. P. I.——Specialist in Commercial Horticulture, 1944, 1949
Ralph J. Ballew, B.S., Auburn University; M.S., Michigan State——Visual Editor, 1954, 1961
Ann Barr, B.S., Alabama College——State 4-H Club Leader for Girls 1945, 1950
Sidney Bell, B.S., M.S., Auburn University; Ph.D., Michigan State U.——Specialist in Farm Management, 1960
A. J. Brown, B.S., M.S., Auburn University——Specialist in Poultry Marketing, 1948, 1960
Elizabeth Bryan, B.S., Auburn University; M.S., Tennessee——Extension Economist, Home Management, 1939, 1957
M. D. Bond, B.S., M.S., Auburn University——Peanut and Soybean Specialist, 1955, 1960
Charles Allen Black, B.A.A., Auburn University——Assistant Art Editor, 1962
James R. Buttram, B.S., M.S., Mississippi State U.——Survey Entomologist, 1961
Thomas C. Casaday, B. S., M. of Agr., Auburn University——Specialist, Rural Resource Development, 1949, 1961
**A. R. Cavender, B.S., M.S., Tennessee——Specialist in Meat Marketing, 1958, 1960

** On leave.

Walter K. Cheney, B.A.A., Auburn University—Art Editor, 1958, 1962
R. R. Chesnutt, B.S., Auburn University—Agricultural Editor, 1941, 1948
Robert R. Clark, B.S., Auburn University—Specialist, Rural Resource Development, 1954, 1961
Kenneth J. Copeland, B.S., Auburn University—News Editor, 1957, 1960
William T. Cox, B.S., Auburn University—Specialist in Farm Buildings, 1950, 1951
S. B. Doughty, B.S., Iowa State College—Specialist, Farm Management, 1923, 1962
Isabelle Downey, B.S., Auburn University; M.S., Georgia—Specialist in Food Preservation, 1944, 1958
Samuel E. Eich, Jr., B.S., Auburn University—Specialist, Rural Resource Development, 1957, 1962
John Elliott, Jr., B.S., Auburn University—Specialist, Rural Resource Development, 1953, 1961
Lawrence Ennis, B.S., Auburn University—Registered P. E., State of Alabama; Specialist in Soil Engineering, 1945, 1949
R. C. Farquhar, B.S., M.S., Auburn University—Specialist in Beef Cattle & Sheep, 1949, 1962
J. T. Gaillard, B.S., Auburn University—Registered P. E., State of Alabama; Specialist in Farm Mechanization, 1944, 1949
M. R. Glasscock, B.S., Auburn University—Specialist in Fruits and Vegetable Marketing, 1941, 1962
W. H. Grimes, B.S., M.S., Auburn University—Entomologist, 1957, 1961
J. B. Henderson, B.S., M.S., Auburn University—Specialist in Cotton, 1960, 1963
Foy Helms, B.S., Auburn University—Agricultural Economist, 1943, 1949
Robert C. Horn, B.S., Auburn University; M.S., Wisconsin—Specialist, Rural Resource Development, 1944, 1961
J. R. Hubbard, B.S., Auburn University; M.S., Cornell—Specialist in Poultry, 1939, 1960
John M. Huie, B.S., M.S., Auburn University—Specialist, Rural Resource Development, 1962
R. S. Jones, Jr., B.S., Auburn University—Dairyman, 1941, 1959
Troy Keeble, B.S., M.S., Auburn University—Specialist in Ornamental Horticulture, 1958
E. F. Kennamer, B.S., M.S., Auburn University—Specialist in Wildlife, 1940, 1960
Worth Lanier, B.S., Mississippi State University; DVM, Auburn University—Extension Veterinarian, 1960
Roy J. Ledbetter, B.S., M.S., Auburn University—Entomologist, 1954, 1962
Daniel A. Linton, Jr., B.S., M.S., Auburn University—Specialist in Livestock Marketing, 1962
H. E. Logue, B.S., M.S., Auburn University—State 4-H Club Leader, 1942, 1948
J. C. Lowery, B.S., Auburn University—Agronomist, 1923, 1934
Norman E. McGlohon, B.S., M.S., Clemson; Ph.D., N.C. State—Plant Pathologist-Nematologist, 1961
C. L. Maddox, B.S., M.S., Auburn University—Specialist in Farm Management, TVA, 1954, 1960
Elta Majors, B.S., Auburn University; M.S., Tennessee—Specialist in Child Care and Family Life, 1934, 1940
M. Cecil Mayfield, B.S., Auburn University—4-H Club Specialist, 1955, 1961
J. A. Marable, B.S., M.S., Auburn University—Specialist, Rural Resource Development, 1955, 1962
I. R. Martin, B.S., M.S., LSU—Extension Forester, 1941, 1948
Melvin M. Moorer, B.S., Auburn University—Specialist in Seed Marketing, 1957
J. Glenn Morrill, B.S., Brigham Young University; M.S., Utah State University; Ed.D., Cornell—Specialist in Extension Training and Development, 1960
Dorothy Overbey, B.S., Tennessee—Specialist in Consumer Education, 1943, 1949
Carl Parker, B.S., Auburn University—Specialist, Rural Resource Development, 1944, 1961
J. R. Parrish, B.S., M.S., Auburn University—Dairyman, 1938, 1948
John L. Parrott, B.S., Auburn University—Radio and TV Editor, 1959, 1961

Alice Peavy, B.S., Alabama; M.A., Columbia—Specialist in Home Furnishings, 1941, 1959
G. B. Phillips, B.S., Auburn University—Specialist in Animal Industry, 1927, 1947
Fariss Prickett, B.S., Auburn University—Specialist in Foods and Nutrition, 1955, 1958
Jeanne Priester, B.S., Alabama College; M.S., Auburn University—Specialist in Equipment and Housing, 1958, 1960
Charles H. Segrest, B.S., M.S., Auburn University—Specialist, Rural Resource Development, 1956, 1962
James H. Sellers, B.S., Auburn University—Specialist in Beef Cattle Production, 1939, 1960
Ralph L. Sherer, B.S., Auburn University; M.S., Cornell—Specialist, Rural Resource Development, 1956, 1961
Jack Smith, B.A., Auburn University—News Editor, 1962
Walter F. Sowell, B.S., M.S., Auburn University; Ph.D., Purdue—Soils Specialist, 1948, 1960
Macon B. Tidwell, B.S., M. of Agr., Auburn University—Specialist, Rural Resource Development, 1957, 1961
Kathleen Thompson, B.S., Alabama; M.S., Penn. State—Specialist in Clothing and Handicraft, 1944, 1952
H. B. Thornhill, B.S., Auburn University; M.S., Clemson—Marketing Specialist in Ornamental Horticulture, 1941, 1961
Don Walters, B.S., Auburn University—Management Specialist, 1961, 1962
William R. Williams, B.S., Auburn University, M.S., Tennessee—Test Demonstration Supervisor, 1946, 1962
Byron B. Williamson, Jr., B.S., M. of Agr., Auburn University—Specialist, Rural Resource Development, 1946, 1961
William E. Wilson, B.S., M. of Agr., Auburn University—Specialist, Rural Resource Development, 1954, 1961

OTHER STAFF

Mrs. Carrie Lena Smith Culpepper, B.S., Auburn University—Editorial Assistant, 1961
Mrs. Charlotte N. Denson—Editorial Assistant, 1960, 1962
Mrs. Myrtle L. Good—Recorder of Reports, 1929, 1947
Mrs. Ella M. Harris, A.B., Birmingham-Southern—Photographic Technician, 1961
Mrs. Beth A. Howell, B.S., Stephen F. Austin College; M.R.E., Southwestern Baptist Theological College—Editorial Assistant, 1962
Mrs. Kathryn A. Ingram—Senior Secretary, 1960, 1961
Miss Mary Dalene Jeter—Administrative Secretary, 1928, 1947
Miss Rennie B. Jeter—Business Assistant, 1934, 1947
Miss Loretta Livingston—Audio-Visual Technician, 1962
Mrs. Anna Breeden Stickney—Editorial Assistant, 1946, 1962
Mr. Charles Douglas Wright—Draftsman, 1961

COUNTY AND HOME AGENTS

(List for each county as follows: County address, county agent, assistant county agent; home demonstration agent, assistant home demonstration agent, first appointment, present appointment. All degrees are from Auburn University unless otherwise indicated.)

AUTAUGA
Prattville
R. H. Kirkpatrick, B.S., 1944, 1953; J. R. Danion, B.S., M.S., University of Georgia, 1960.
Margaret Campbell, B.S., Alabama College, M.S., Tennessee, 1950, 1956; Barbara Ann Williams, B.S., Florence State College, 1961.

BALDWIN
Bay Minette
F. C. Turner, B.S., 1938, 1944; W. H. Johnson, B.S., 1934, 1936; J. T. Bouler, B.S., 1956; Donald Eugen Dunn, B.S., 1962.
Mrs. Cary C. Silvey, B.S., 1955, 1957; Mrs. Eugenia Small, B.S., 1937, 1958; Mrs. Marvell Gwaltney, B.S., Alabama, 1959.

BARBOUR
Clayton
J. W. Walton, B.S., 1946, 1953; J. L. Parker, B.S., 1960.
Mrs. Frances Watson, A.B., Huntingdon, 1934, 1937; Mary Ellen Crews, B.S., 1958, 1959.

BIBB
Centreville

J. C. Odom, B.S., 1935, 1946; T. W. Camp, B.S., 1951, 1952.
Kirtis Martin, B.S., 1933, 1937; Kathryn Elliott Hunt, B.S., Mississippi State, 1962.

BLOUNT
Oneonta

D. S. Loyd, B.S., M. Ag., 1942, 1954; J. B. Butler, B.S., 1954; L. C. McCall, B.S., 1955.
Mildred Gilbert, B.S., 1944, 1949; Julia Elise Brown, B.S., 1962.

BULLOCK
Union Springs

W. E. Stone, B.S., 1947, 1955; Donald E. Roberts, B.S., 1962.
Carolyn Henderson, B.S., 1941, 1947.

BUTLER
Greenville

F. H. Morgan, B.S., 1946; R. C. Thompson, B.S., 1954; J. P. Moore, B.S., 1953, 1957.
Laurene Howell, B.S., Alabama, 1949, 1959; Wanda Herren, B.S., 1961.

CALHOUN
Anniston

A. S. Mathews, B.S., 1941, 1942; T. L. Bass, B.S., 1946; Goode Nelson, A.B., Alabama, 1945, 1948; L. G. Pair, B.S., 1948, 1957.
Mrs. Yancey Walters, B.S., Alabama College, 1948, 1950; Jean E. Norwood, B.S., 1961; Shirley Ann Harrison, B.S., 1961, 1963.

CHAMBERS
LaFayette

E. L. Stewart, B.S., M.S., 1944, 1946.
Exa Till, B.S., 1946, 1948; Mrs. Ruenette B. Gilbert, B.S., Berry College, M.S., 1961.

CHEROKEE
Centre

J. J. Young, B.S., M.S., 1933, 1944; F. M. Patterson, B.S., 1954, 1960; T. C. Owen, B.S., 1945, 1956.
Geneva Marshall, B.S., 1941, 1943; Mrs. Virginia Garmon, B.S., Alabama College, 1945, 1958.

CHILTON
Clanton

J. D. Sellers, B.S., 1949, 1960; D. R. Mims, B.S., 1953; W. R. Futral, B.S., 1959.
Mrs. Johnnie Lane, A.B., Judson, 1952, 1954; Mrs. Martha K. Radford, B.S., Alabama, 1957, 1962.

CHOCTAW
Butler

Mathew Sexton, B.S., 1937; R. B. Deavours, B.S., 1946, 1948.
Mrs. Grace Prince, B.S., 1951, 1956; Johnie Beauchamp, B.S., Alabama College, 1960.

CLARKE
Grove Hill

O. C. Helms, B.S., 1930, 1933; Howard Blair, B.S., 1942, 1945.
Lucile Burson, B.S., M.S., 1936.

CLAY
Ashland

W. H. Cowan, B.S., 1936, 1941; Loyd P. Owens, B.S., 1954, 1962.
Dora Smith, B.S., Alabama College, 1952, 1953; Rochelle Williams, B.A., Mississippi, 1958.

CLEBURNE
Heflin

T. A. Ventress, B.S., 1937, 1948; E. C. Farrington, B.S., 1941.
Annie Rae Milner, B.S., Alabama College, 1941, 1942.

COFFEE
Enterprise

J. R. Speed, B.S., 1943, 1945; Joe E. Lashley, B.S., 1961; H. B. Thompson, B.S., M.S., 1962.
Mrs. Sarah Hutchinson, B.S., Howard College, 1956; Mrs. Georgia R. Flemming, B.S., 1962.

COLBERT
Tuscumbia

D. G. Somerville, B.S., 1939, 1942; B. T. Richardson, B.S., 1945; F. D. Robinson, B.S., 1949, 1953.
Mrs. Christa Hall, B.S., Alabama, 1950, 1960; Betty Carolyn Davis, B.S., 1963.

CONECUH
Evergreen

M. H. Huggins, B.S., 1936, 1958; H. J. Oakley, B.S., 1954; Gerthen E. Williams, B.S., 1961.
Mrs. Louise T. Ostrum, B.S., M.S., 1957, 1961; Hazel Ann Herring, B.A., Judson College, 1961.

COOSA
Rockford

G. S. Sessions, B.S., M.A., 1955, 1961; W. F. Williams, B.S., 1956.
Wilma Jo Gross, B.S., 1959, 1961; Eleanor Joyce Richardson, B.S., 1962.

COVINGTON
Andalusia

W. H. Kinard, B.S., M.S., 1954; Robert E. Linder, B.S., 1960; Dean W. Parris, B.S., 1959, 1962; C. W. Pike, B.S., 1952, 1953.
Mrs. Mary Ellen Haynes, B.S., Alabama College, 1951, 1961; Mrs. Myrna J. Rhoades, B.S., Alabama, 1962.

CRENSHAW
Luverne

O. W. Reeder, B.S., 1941, 1948; G. B. Handley, B.S., 1948.
Ida Jo Harrison, B.S., Alabama College, 1956, 1958; Catherine Cameron, B.S., Alabama College, 1962.

CULLMAN Cullman	H. S. Pinkston, B.S., 1937, 1945; C. F. Thomas, B.S., M.S., 1958; Harold Eugene Rose, B.S., 1961; William B. Webster, B.S., 1961. Mrs. Mary Sue Tillery, B.S., 1947, 1948; Mrs. Inez Ballew, B.S., 1954; Mary L. Brown, B.S., Judson College, 1961.
DALE Ozark	W. D. Thomason, B.S., 1931; T. G. Hubbard, B.S., M. of Agr., 1936; Robert N. Hall, B.S., M.S., 1960. Ruth Sundberg, B.S., M.S., Tennessee, 1941, 1951; Martha Ann Andrews, B.S., 1962.
DALLAS Selma	L. C. Alsobrook, B.S., 1942, 1949; W. M. Arrington, B.S., 1950, 1953; Wyeth H. Speir, Jr., B.S., 1961. Dorothy Hixson, B.S., Alabama College, M.S., Columbia, 1937, 1940; Norma Jean Manley, B.S., Mississippi Southern College, 1961.
DeKALB Ft. Payne	H. H. Marks, B.S., 1954, 1960; D. C. Poe, B.S., 1956, 1957; Howard D. Hall, B.S., 1962; Maxwell P. Yeargan, B.S., 1962. Mary Louise Walker, B.S., Peabody, 1954, 1962; Mary Jane Daniel, B.S., Alabama, 1962.
ELMORE Wetumpka	J. E. Morriss, B.S., M.S., 1935; W. E. Davis, B.S., 1959; V. L. Keeble, B.S., 1942; F. H. Lovvorn, B.S., M. Ag., 1957. Betty Hamilton, B.S., Alabama, 1947, 1953; Hattie Wilson, B.S., Alabama College, 1947, 1954; Madelyn E. Carlton, B.S., 1963.
ESCAMBIA Brewton	F. A. Rew, B.S., Mississippi A&M, 1922, 1946; C. B. Vickery, B.S., 1948; Thomas James Dill, B.S., M.S., MSU, 1962. Mrs. Juanita Hendrix, B.S., Alabama College, 1959, 1960; Virginia Hardenbergh, B.S., 1960.
ETOWAH Gadsden	T. L. Sanderson, B.S., M.S., 1943, 1949; H. J. Jackson, B.S., Georgia, 1944; A. D. Jones, B.S., 1948. Mrs. Sara L. Thomas, B.S., 1947, 1948; Mrs. Celeste H. Martin, B.S., 1957, 1961.
FAYETTE Fayette	Albert Pitts, B.S., 1952, 1958; James Pettus Tucker, B.S., 1961. Annie Mary Hester, B.S., Berry College, M.S., Alabama, 1953, 1956; Mrs. Jean McCracken, B.S., Alabama, 1957.
FRANKLIN Russellville	H. A. Ponder, B.S., 1935, 1949; H. W. Warren, B.S., 1945, 1951; Larry W. Roberts, B.S., 1960. Joyce McNutt, B.S., 1954, 1957; Elaine C. Brooks, B.S., Howard College, 1962.
GENEVA Geneva	R. C. Reynolds, B.S., M.S., 1954, 1960; ***B. E. Anderson, B.S., 1960; J. C. Beasley, B.S., 1960; Max Franklin Scott, B.S., 1962. Mrs. Carrie Threaton, B.S., Alabama College, 1929, 1935; Mrs. Emily H. Seay, B.S., Alabama College, 1960, 1962.
GREENE Eutaw	W. H. Johnson, B.S., 1935, 1942; Norman L. West, B.S., 1961. Mary Forney Hughes, B.S., Alabama, 1949, 1950.
HALE Greensboro	J. B. Deavours, B.S., 1937, 1946; J. N. Glass, B.S., 1948, 1950; E. M. Knowles, B.S., 1953, 1957. Mrs. Goldie Kerr, B.S., M.S., Alabama, 1951; Mrs. Marie P. Dombhart, B.S., 1959.
HENRY Abbeville	R. C. Hartzog, B.S., 1946, 1955; Carl Dennis, B.S., 1954; C. L. Barefield, B.S., 1951, 1955. Lillian Cox, B.S., Mississippi State College for Women, 1933, 1935; Mrs. Margaret O. Eason Kirkland, B.S., Jacksonville State College, 1961.
HOUSTON Dothan	Allen M. Mathews, B.S., 1957, 1961; J. N. White, B.S., 1936, 1948; Luther J. McGaughy, B.S., 1960; Marion H. Roney, B.S., 1962. Julia Smith, B.S., 1955, 1956; Thelma E. Graves, B.S., M.S., Iowa State College, 1961; Shirley Karr, B.S., Howard College, 1960.

*** On military leave.

JACKSON Scottsboro	J. E. Carter, B.S., 1928, 1947; S. L. Worley, B.S., 1943, 1947; Louis Edward White, B.S., 1962. Mrs. Clyde Peck, B.S., 1942, 1946; Ivous T. Sisk, B.S., Florence State Teachers College, 1959.
JEFFERSON Birmingham	C. H. Johns, B.S., 1937, 1946; B. O. McDonald, B.S., 1959; C. W. Burns, B.S., 1957; R. A. Griffin, B.S., M.S., 1960; E. N. Graham, B.S., M.S., Mississippi State University, 1960. Irby Barrett, B.S., 1933, 1938; Barbara Fite, B.S., Alabama College, 1956; Mrs. Madge M. Bush, B.S., University of Georgia, 1961.
LAMAR Vernon	H. H. Lumpkin, B. S., 1950, 1954; L. G. Gober, B.S., 1960. Barbara Clements Alawine, B.S., Alabama, 1953, 1961; Mary Ellen Smith, B.S., Jacksonville State, 1962.
LAUDERDALE Florence	L. T. Wagnon, B.S., 1935, 1957; A. C. Heaslett, B.S., 1957; James Gordon Link, Jr., B.S., M.S., 1961, 1962. Sara F. Conner, B.S., Alabama College, 1949, 1958; Willie Mae Crockett, B.S., Florence State Teachers College, 1957, 1959; Olivia Ann James, B.S., Alabama, 1962.
LAWRENCE Moulton	S. P. McClendon, B.S., 1943, 1946; J. H. Pitts, B.S., M.S., 1955. Mrs. Ruby Looney, B.S., Athens College, 1953, 1956; Carylon Sue Thorn, B.S., Florence State, 1962.
LEE Opelika	R. W. Teague, B.S., 1948, 1958; P. O. Johnson, B.A., 1959; James R. Hurst, B.S., M.S., 1960. Mrs. Elizabeth Crum, B.S., 1955, 1957; Mrs. Thelma Jo McAtee, B.S., University of Kentucky, 1961.
LIMESTONE Athens	F. K. Agee, B.S., 1945, 1947; C. R. Morrow, B.S., 1946; Patrick A. Waldrop, B.S., 1962. Mrs. Emma Jo Lindsey, B.S., 1948, 1954; Mrs. Gail Sandlin, B.S., University of Alabama, 1956, 1961.
LOWNDES Hayneville	J. W. Mathews, B.S., 1933; T. J. Gerald, B.S., 1946. Mrs. Mary Maddux, B.S., 1957, 1960.
MACON Tuskegee	J. M. Bolling, B.S., 1939, 1946; Thomas F. Gibson, B.S., 1962. Eunice Prater, B.S., Alabama College, 1953, 1956.
MADISON Huntsville	R. O. Magnusson, B.S., 1948, 1955; H. L. Hood, B.S., 1936, 1957; B. R. Carroll, B.S., 1960; Earl C. Halla, B.S., 1953, 1962. Christine Huber, B.S., Peabody, 1944, 1962; Mrs. Marie Vann, B.S., Alabama College, 1947, 1958; Barbara Owens, B.S., Florence State, 1958, 1962.
MARENGO Linden	F. M. Jones, B.S., 1935, 1938; Cecil Miller, B.S., 1954; Rudy P. Yates, B.S., 1960. Mrs. Marjorie Weaver, B.S., 1943, 1955; Mrs. Mary Ann Weston, B.S., Howard College, 1957, 1960; Mrs. Rosalyn Ketchum Palmer, B.S., 1960.
MARION Hamilton	H. B. Price, B.S., 1945, 1963; M. T. Whisenant, B.S., 1949, 1950; I. D. Thornton, B.S., M.S., 1944. Elna Tanner, B.S., M.S., 1950, 1952; Penelope L. Flippo, B.S., Alabama, 1962.
MARSHALL Guntersville	W. L. Martin, B.S., 1942, 1944; R. I. D. Murphy, B.S., 1958; Elmer O. Strickland, B.S., M.S., 1961. Betty L. Woodruff, B.S., Alabama, 1958, 1962; Deloris Haynes, B.S., Jacksonville State College, 1958.
MOBILE Mobile	C. J. Brockway, B.S., 1922, 1934; W. L. Deakle, 1943, 1944; J. P. Givhan, B.S., 1935, 1946; Charles C. Baskin, B.S., 1957, 1961. Mona Whatley, B.S., Peabody, 1941, 1945; Mrs. Mildred Payne, B.S., 1941, 1954; Mrs. Frances Radney, B.S., 1955.
MONROE Monroeville	A. V. Culpepper, B.S., 1928; R. J. Martin, B.S., 1946. Annie Richardson, A.B., Judson College, 1952.
MONTGOMERY Montgomery	T. P. McCabe, B.S., 1939, 1958; W. R. Helms, B.S., 1951, 1958; W. H. Kendrick, B.S., 1958. Mrs. Maude Woodfin, A.B., Huntingdon, 1933, 1950; Mrs. Virginia Gilchrist, B.S., Alabama, 1955.

MORGAN Hartselle	C. D. Rutledge, B.S., 1948, 1957; H. W. Houston, B.S., 1954, 1957; J. R. Stephenson, B.S., 1959. Lucile Hawkins, B.S., Alabama College, 1948, 1950; Mary O. Coffey, A.B., Judson College, 1961.
PERRY Marion	W. O. Hairston, B.S., 1946, 1954; J. A. Bates, B.S., 1950. Evelyn Graham, B.S., Alabama, 1950, 1954; Mrs. Joyce Richardson, B.S., Judson College, 1958.
PICKENS Carrollton	C. G. Davis, B.S., M. of Agr., 1948, 1954; G. T. Balch, B.S., 1957. Mrs. Helen B. Hill, B.S., Alabama College, 1941, 1961; Mrs. Lorraine Meeks, B.S., Alabama, 1957.
PIKE Troy	H. J. Carter, B.S., 1935, 1936; G. M. Wakefield, B.S., M.S., 1957; Howard Allen Taylor, B.S., M.S., 1962. Margaret Brown, B.S., Alabama, 1943, 1944; Mrs. Florence Owens, B.S., FSU, 1958; Joyce Marie Haggard, B.S., Alabama College, 1962.
RANDOLPH Wedowee	C. A. Moore, B.S., 1955, 1958; T. J. Burnside, Jr., B.S., 1960. Billie Cotney, B.S., Alabama College, 1947, 1949; Madeline C. Fields, B.S., University of Alabama, 1961.
RUSSELL Phenix City	C. A. Woods, B.S., 1947, 1955; J. A. McLean, B.S., M.S., 1954, 1955. Alma Holladay, B.S., 1941, 1961.
ST. CLAIR Pell City	H. L. Eubanks, B.S., 1934, 1946; W. D. Jackson, B.S., 1946; J. E. Yates, B.S., 1955. Aileen Puckett, B.S., Alabama, 1957; Betty Ann Colvin, B.S., Alabama College, 1961.
SHELBY Columbiana	A. A. Lauderdale, B.S., 1924; W. M. Clark, B.S., 1937, 1947; J. E. Jones, B.S., 1958. Marian Cotney, B.S., 1939; Linda K. Gillespie, B.S., 1961.
SUMTER Livingston	W. B. Story, 1930, 1932; F. W. Kilgore, B.S., 1954; Howard N. Reynolds, B.S., M.A., 1962. Mrs. Mildred Ennis, B.S., Tennessee, 1958; Mrs. Annie Walker Stringer, B.S., University of Southern Mississippi, 1961.
TALLADEGA Talladega	O. V. Hill, B.S., 1935, 1936; A. A. Hester, B.S., 1944; J. B. Mathews, B.S., 1949, 1951; R. H. Lee, B.S., 1958. Mary Baughn, B.S., Alabama College, 1951, 1957; Patricia Nunn, B.S., 1957; Elizabeth Ann Murphree, B.S., 1962.
TALLAPOOSA Dadeville	C. H. Webb, B.S., 1957, 1961; V. C. Bice, B.S., 1958; R. W. Thompson, B.S., M.S., 1958; Horace Winfred Davis, B.S., 1962. Mrs. Margaret Miller, B.S., 1949, 1958; Nelda Lena Jones, B.S., Alabama, 1962.
TUSCALOOSA Tuscaloosa	B. R. Holstun, B.S., 1934, 1938; James Cooper, B.S., 1948; French Sconyers, B.S., 1943, 1947; **J. N. Williams, B.S., 1950, 1954. Mrs. Elizabeth Stewart, B.S., 1945, 1961; Mrs. Sarah N. Watson, B.S., University of Alabama, 1961; Mrs. O'Neal Massey, B.S., 1952, 1961.
WALKER Jasper	Robert E. Thornton, B.S., 1954, 1962; W. D. Jones, B.S., 1954; W. J. Thompson, B.S., M.S., 1954, 1955. Mrs. Jeanette Argo, B.S., Alabama College, 1949, 1959; Amelia Frost, B.S., Alabama College, 1958, 1961; Barbara Vinson, B.S., Huntingdon College, 1962.
WASHINGTON Chatom	D. O. Estes, B.S., 1949, 1952; George Clayton Hoomes, B.S., 1963. Mrs. Roma J. Weeks, B.S., University of Southern Mississippi, 1959; Dorothy Sandra Henze, B.S., U. of Sou. Miss., 1962.
WILCOX Camden	F. M. Barnett, B.S., 1943, 1944; W. J. Hardy, B.S., 1954. Margaret Whatley, B.S., 1941, 1944.
WINSTON Double Springs	W. L. Richardson, B.S., 1935, 1945; J. E. Fields, B.S., 1949. Madge Pennington, B.S., 1941, 1942.

** On leave.

STATE REGULATORY AND VETERINARY SERVICES

STATE REGULATORY SERVICE

CHEMISTRY

SAUNDERS, CHARLES RICHARD — *State Chemist*, 1924, 1950
B.S., M.S., Auburn University; Ph.D., Nebraska.

AUGUST, NEAL NICHOLAS — *Agricultural Chemist*, 1962
B.S., Auburn University.

BIDEZ, ALICE BEASLEY — *Secretary*, 1934

CHEN, FRED A. — *Agricultural Chemist*, 1958
B.A., Huntingdon College.

GAUNTT, SELLERS — *Asst. Chemist*, 1961

HARRIS, ROBERT RUSHIN — *Agricultural Chemist*, 1961
A.B., U. of Alabama.

RHODES, REGINA A. — *Agricultural Chemist*, 1961
B.S., Auburn University.

RICHBURG, REX WESLEY — *Principal Chemist*, 1950, 1961
B.S., Auburn University; B.S., Troy State.

STATE VETERINARY DIAGNOSTIC LABORATORY

(Conducted in cooperation with the Alabama State Department of Agriculure and Industries and the United States Department of Agriculture, Agricultural Research Service.)

GREENE, JAMES E. — *Dean, School of Veterinary Medicine*, 1937, 1958
D.V.M., M.S., Auburn University.

MILLIGAN, JOHN G. — *State Veterinarian*, 1951
B.S., D.V.M., Auburn University.

*ROBERTS, CHAS. S. — *In Charge of State Diagnostic Laboratory*, 1947, 1958
D.V.M., Auburn University; M.S., Michigan State.

HANNAH, SADIE J. — *Bacteriologist, State Diagnostic Laboratory*, 1962
B.S., Auburn University.

HEMMINGER, JANICE F. — *State Federal Bang's Disease Laboratory*, 1962

HUNTER, KATHRYN — *Laboratory Assistant II, State Diagnostic Laboratory*, 1959

HARRIS, PATRICIA A. — *Bacteriologist, State Diagnostic Laboratory*, 1962
B.S., Auburn University.

WHITE, GERALDINE W. — *Secretary, State Diagnostic Laboratory*, 1958

WORTHY, MARY — *Laboratory Assistant II, State Diagnostic Laboratory*, 1959

EMRICK, V. R. — *U.S. Dept. of Agriculture, Agricultural Research Service, In Charge of Bang's Disease Laboratory*, 1949

BRADFORD, R. H. — *U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide*, 1955

THOMPSON, JAMES L. — *U.S. Dept. of Agriculture, Agricultural Research Service, Livestock Inspector*, 1960

WARD, PEGGY — *U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide*, 1961
R.N., Chestnut Hill Hospital, Philadelphia, Pa.

WILLIAMSON, O. B. — *U.S. Dept. of Agriculture, Agricultural Research Service, Biological Laboratory Aide*, 1955

WILLIAMSON, RUTH — *U.S. Dept. of Agriculture, Agricultural Research, Service, Biological Laboratory Aide*, 1957

MCCREARY, V. D. — *In Charge of State Branch Veterinary Diagnostic Laboratory, Elba, Alabama*, 1960
D.V.M., Auburn University.

TOLBERT, VONBORO SUE — *Laboratory Assistant, State Branch Veterinary Diagnostic Laboratory, Albertville, Alabama*, 1955

* Jointly employed by Alabama Department of Agriculture and Industries and Experiment Station, Auburn, Ala.

Enrollment Statistics

1962-1963

Table I—Enrollment by Classes, Courses, and Divisions

FALL QUARTER, 1962

DIVISION AND COURSE	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
School of Agriculture																
Agricultural Sciences	41		38		29		16				73	2	10		207	2
Agricultural Administration	19		12		18		9								58	
Agricultural Engineering	26		7		3		3				2				41	
Biological Sciences	24	2	8	3	12	1	6				39	5	5		94	11
Forestry	65		31		28		24				6		1		155	
Ornamental Horticulture	6		3	1	5		1								15	1
TOTAL	181	2	99	4	95	1	59				120	7	16		570	14
School of Architecture																
Architecture	48	4	61	2	28		25		24						186	6
Art	73	46	31	18	16	8	9	7			1			1	130	80
Building Construction	47		32		27		25								131	
Dramatic Arts		7	1			2								1	1	10
Interior Design	5	14	7	6	2	2	7	2							21	24
Music	1	5	2	6	2			2					1		6	13
TOTAL	174	76	134	32	75	12	66	11	24		1		1	2	475	133
School of Chemistry																
Chemistry	17	6	20	2	9	1	9				23	4	2	1	80	14
Chemical Engineering	49	2	44		43		29	1			5		1		171	3
Laboratory Technology	3	38	1	20	2	14		4						1	6	77
TOTAL	69	46	65	22	54	15	38	5			28	4	3	2	257	94
School of Education																
Agricultural Education					44		30				33		6		114	
Agricultural Education (Saturday Students)																
Education	138	367	97	321	51	241	63	204			190	193	21	58	560	1384
Education (Saturday Students)																
Psychology	14	17	14	8	15	6	4	10			7	4	2		56	45
TOTAL	152	384	111	329	110	247	97	214			230	197	29	58	729	1429

DIVISION AND COURSE	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
School of Engineering																
Aeronautical Administration			46		30		10								86	
Aerospace Engineering			34	1	25	1	16				3		1		79	2
Civil Engineering	2		43		55		28				9				137	
Electrical Engineering			130		137	1	83				23				373	1
Engineering Physics	2		6		8		4								20	
Industrial Management	3		94		80		63								240	
Mechanical Engineering			77		80	1	48				23		2		230	1
Pre-Engineering	955	9													955	9
Pre-Engineering Management	136														136	
Textile Management			17	1	10		5								32	1
Textile Sciences			4		1		1								6	
TOTAL	1098	9	451	2	426	3	258				58		3		2294	14
School of Home Economics																
Home Economics		88	1	88		37		20			1	18		3	2	254
Nursing Science		3		1												4
TOTAL		91	1	89		37		20			1	18		3	2	258
School of Pharmacy																
Pharmacy	61	14	53	9	57	5	42	6			4		1		218	34
School of Science & Literature																
Business Administration	299	23	268	14	193	6	149	9			13	4	4	1	926	57
Pre-Dentistry	32	1	20		5										57	1
Pre-Law	46	2	27	2	9	1	9								91	5
Pre-Medicine	54	10	45	2	14		4						3		120	12
Pre-Veterinary Medicine	63	9	32	2											95	11
Mathematics	19	21	24	12	18	3	1	3			37	6	2		101	45
Physics	17	3	18	1	18		10				13	1	1		77	5
Science & Literature	113	100	67	52	31	24	43	27			18	30	5	1	277	234
Secretarial Administration		42	1	26		11		7							1	86
TOTAL	643	211	502	111	288	45	216	46			81	41	15	2	1745	456
School of Veterinary Medicine																
Veterinary Medicine			63	4	52	2	51	3	48		9				223	9
GRAND TOTAL	2378	833	1479	602	1157	367	827	305	72		532	267	68	67	6513	2441

Table II—Enrollment by Classes, Courses and Divisions

SUMMER, FALL, WINTER AND SPRING 1962-63 (as of March 23, 1963)

DIVISION AND COURSE	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
School of Agriculture																
Agriculture	54		42		31		20				95	2	18		260	2
Agricultural Administration	28		15		20		10								73	
Agricultural Engineering	31		8		4		4				6		1		54	
Forestry	82		35		29		28				7		1	1	182	1
Ornamental Horticulture	6		4	1	5		2								17	1
Biological Sciences	27	2	9	3	13	2	6				52	5	12		119	12
TOTAL	228	2	113	4	102	2	70				160	7	32	1	705	16
School of Architecture																
Architecture	51	4	61	3	30		30	1	25				1	1	198	9
Applied Art	55	53	26	19	9	8	13	8			1		1	2	105	90
Building Construction	59		47		31		36								173	
Industrial Design	40	3	12		8		7								67	3
Interior Design	5	15	7	6	2	2	9	3							23	26
Music	2	5	3	6	2								1	1	8	12
Dramatics		8	1	1		2		3						1	1	15
TOTAL	212	88	157	35	82	12	95	15	25		1		3	5	575	155
School of Chemistry																
Chemistry	20	7	24	2	12	1	11				23	3	2	1	92	14
Chemical Engineering	55	2	57		48		40	1			6	2	1		207	5
Laboratory Technology	4	40	1	20	2	15		4						1	7	80
TOTAL	79	49	82	22	62	16	51	5			29	5	3	2	306	99
School of Education																
Agricultural Education					45		36				57		13		151	
Agricultural Education (Saturday Students)																
Education	164	396	115	372	65	281	91	278			418	466	57	125	910	1918
Education (Saturday Students)											7	5		1	7	6
Psychology	21	19	18	9	17	8	11	12			12	6	5	2	84	56
TOTAL	185	415	133	381	127	289	138	290			494	477	75	128	1152	1980

DIVISION AND COURSE	Freshmen		Sophomores		Juniors		Seniors		5th Year		Graduates		Special and Unclassified		Total	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
School of Engineering																
Aeronautical Administration			50		34		11								95	
Aerospace Engineering			44	1	29		27				4		3		107	1
Civil Engineering	4		58		73		46				14				195	
Electrical Engineering	3		151		165	1	125				30				474	1
Engineering Physics			6		9		7								22	
Industrial Management	3		110		81		89								283	
Mechanical Engineering	1		96		88	1	63				29		3		280	1
Pre-Engineering	1166	11													1166	11
Pre-Engineering Management	171														171	
Textile Management			18	1	11		9								38	1
Textile Sciences			4		1		1								6	
TOTAL	1348	11	537	2	491	2	378				77		6		2837	15
School of Home Economics																
Home Economics		101	1	93		42	1	30			1	31		10	3	307
Nursing Science		3		2												5
TOTAL		104	1	95		42	1	30			1	31		10	3	312
School of Pharmacy																
Pharmacy	78	14	63	12	68	7	56	8			5	2	1		271	43
School of Science & Literature																
Business Administration	414	27	315	18	223	9	220	11			15	4	8	1	1195	70
Pre-Dentistry	37	1	23		5										65	1
Pre-Law	55	3	31	1	10	1	9								105	5
Pre-Medicine	60	12	51	4	14		7						4		136	16
Pre-Veterinary Medicine	66	9	40	2	1									1	107	12
Physics	19	3	25	1	19		10				15	1	1		89	5
Mathematics	25	25	28	14	19	3	1	3			54	10	3		130	55
Science & Literature	144	123	78	50	34	27	67	38			28	44	12	7	363	289
Secretarial Training		53		28		11		11						1		104
Science Institute											17	10			17	10
TOTAL	820	256	591	118	325	51	314	63			129	69	28	10	2207	567
School of Veterinary Medicine																
Veterinary Medicine			63	4	52	2	51	3	49		14				229	9
GRAND TOTAL	2950	939	1740	673	1309	423	1154	414	74		910	591	148	156	8285	3196

Table III—Enrollment of Alabama Students by Counties

SUMMER, FALL, WINTER AND SPRING 1962-63 (as of March 23, 1963)

County	Men	Women	Total	Veterans
Autauga	42	17	59	
Baldwin	100	44	144	2
Barbour	56	17	73	1
Bibb	16	6	22	
Blount	34	11	45	
Bullock	21	16	37	
Butler	62	22	84	1
Calhoun	130	42	172	
Chambers	171	79	250	9
Cherokee	15	6	21	
Chilton	44	11	55	
Choctaw	6		6	1
Clarke	38	9	47	
Clay	41	12	53	
Cleburne	20	11	31	
Coffee	74	23	97	1
Colbert	67	22	89	3
Conecuh	21	19	40	
Coosa	28	8	36	
Covington	96	27	123	3
Crenshaw	16	9	25	
Cullman	51	21	72	
Dale	64	32	96	2
Dallas	93	36	129	2
DeKalb	56	30	86	2
Elmore	114	40	154	4
Escambia	54	19	73	1
Etowah	144	58	202	2
Fayette	25	5	30	
Franklin	25	11	36	1
Geneva	65	37	102	
Greene	6	2	8	
Hale	17	4	21	
Henry	38	14	52	
Houston	109	51	160	1
Jackson	45	11	56	1
Jefferson	1085	445	1530	8
Lamar	18	4	22	1
Lauderdale	51	15	66	
Lawrence	31	4	35	
Lee	882	362	1214	71
Limestone	24	9	33	
Lowndes	17	6	23	
Macon	43	28	71	2
Madison	186	72	258	2
Marengo	19	5	24	1
Marion	20	3	23	1
Marshall	71	22	93	3
Mobile	491	143	634	3
Monroe	32	15	47	
Montgomery	463	212	675	8
Morgan	88	21	109	3
Perry	20	5	25	1
Pickens	16	6	22	
Pike	48	18	66	1
Randolph	64	33	97	1
Russell	84	34	118	3
St. Clair	20	15	35	2
Shelby	35	12	47	2
Sumter	5	8	13	
Talladega	137	71	208	3
Tallapoosa	127	78	205	3
Tuscaloosa	19	1	20	1
Walker	36	4	40	1
Washington	15	7	22	
Wilcox	13	7	20	
Winston	15	6	21	
TOTAL (ALABAMA)	6149	2453	8602	158

Table IV—Enrollment of Students by States and Territories

SUMMER, FALL, WINTER AND SPRING 1962-63 (as of March 23, 1963)

State	Men	Women	Total	Veterans
Alabama	6149	2453	8602	158
Arizona	2	2	4	
Arkansas	14	16	30	
California	17	4	21	1
Colorado	1	2	3	
Connecticut	5	1	6	
Delaware	2	1	3	
District of Columbia	2	2	4	
Florida	440	98	538	7
Georgia	688	361	1049	13
Muscogee County, Ga.	168	138	306	16
Hawaii	1		1	
Illinois	11	1	12	
Indiana	4	1	5	
Iowa		2	2	
Kansas	1		1	
Kentucky	69	6	75	4
Louisiana	30	13	43	
Maine	1	1	2	
Maryland	12	3	15	
Massachusetts	6		6	
Michigan	2		2	
Minnesota	2		2	
Mississippi	108	18	126	4
Missouri	4	1	5	
Nebraska	1		1	
New Jersey	13	3	16	
New Mexico	1		1	
New York	31	3	34	2
North Carolina	31	7	38	1
Ohio	12	2	14	1
Oklahoma	6		6	
Pennsylvania	19	2	21	1
Rhode Island	3		3	
South Carolina	57	11	68	
Tennessee	209	25	234	3
Texas	16	3	19	
Virginia	30	6	36	
Washington	2	1	3	
West Virginia	4		4	
Wisconsin	1		1	
Wyoming	1		1	
TOTALS—Other States	2027	734	2761	53
TOTALS—All States	8176	3187	11,363	211

U.S. Territories	Men	Women	Total	Veterans
Canal Zone	5		5	
Puerto Rico	2	1	3	
TOTALS	7	1	8	

Table V—Enrollment of Students by Foreign Countries

SUMMER, FALL, WINTER AND SPRING 1962-63 (as of March 23, 1963)

Foreign Countries	Men	Women	Total	Veterans
Argentina	2		2	
Austria		1	1	
Canada	1	1	2	
China	17		17	
Colombia	4		4	
Cuba	8		8	
Dominican Republic	1		1	
Egypt	2	1	3	
El Salvador	3		3	
Germany	4		4	
Greece	4		4	
Guatemala	2		2	
Honduras	1		1	
Hungary		1	1	
India	12		12	
Indonesia	2		2	
Iran	6		6	
Iraq	2		2	
Israel	1		1	
Japan	1	2	3	
Jordan	6		6	
Korea	5	1	6	
Lebanon	1		1	
Mexico	1		1	
Netherland Antilles	1		1	
Nicaragua	1		1	
Pakistan	1	1	2	
Panama	1		1	
Philippine Islands	1		1	
Republic of Veit Nam	2		2	
Syria	1		1	
Thailand	1		1	
Turkey	1		1	
Venezuela	6		6	
TOTALS—Foreign Countries	102	8	110	
TOTAL—All Students	8285	3196	11,481	211

General Summary of Enrollment 1962-63

SUMMER, FALL, WINTER AND SPRING 1962-63 (as of March 23, 1963)

	Men	Women	Total
Regular Session (Summer, Fall, Winter, and Spring)	8,285	3,196	11,481
Fall Quarter 1962	[6,513]	[2,441]	[8,954]
Correspondence Study Courses	361	330	691
Short Courses and Conferences:			
Alabama Credit Union Conference	82	18	100
Alabama Guidance Association	190	110	300
Alabama Music Instructors Conference	18	6	24
Alabama Pharmaceutical Seminar	91	9	100
Architecture Historical Preservation Conference	15	8	23
Business Education Conference	8	90	98
Drug Merchandizing Conference	30	3	33
Engineering Education Conference	19	0	19
Garden Clubs of Alabama Annual Meeting	2	298	300
Pre-Pharmacy Advisory Group Conference	31	0	31
Principals and Counselors Workshop	37	14	51
University Council for Educational Administration	16	0	16
Beef Cattle Short Course	127	2	129
Cotton Ginners' Short Course	212	0	212
Farm Credit Clinic	122	2	124
Florists' Short Course	32	300	332
4-H Club Conference	416	482	898
Future Farmers of Alabama Meeting	273	0	273
Garden Schools Conference	66	355	421
Insect Detection Short Course	50	0	50
Nurserymen and Landscape Gardeners' Short Course	50	10	60
Poultry Service Men's Short Course	43	0	43
Soil Fertility Short Course	110	0	110
Southern Regional Agricultural Policy Review Conference	182	0	182
Swine Evaluation Conference	75	0	75
Turf Grass Conference	80	10	90
Alabama Textile Education Foundation Conference	25	0	25
Carding and Spinning Conference	300	0	300
Extension Textile Tour	106	0	106
Process Analysis Conference	75	0	75
Slashing and Weaving Conference	200	0	200
Textile Industrial Relations and Training Directors Session	70	0	70
Textile Quality Control and Research Clinic	80	0	80
Textile Safety Seminar	135	0	135
Textile Slashing Conference	65	0	65
Textile Slashing Short Course	121	0	121
Annual Veterinary Conference	173	53	226
Veterinary Conference for Post-Graduates	28	0	28
GRAND TOTAL	11,224	5,296	17,697

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